

# American Cinematographer

International Journal of Motion Picture Photography and Production Techniques

SEPTEMBER 1978/\$1.50



**"OF TIME, TOMBS AND TREASURE: THE TREASURES OF TUTANKHAMUN"**



It all started with a single invention. The fluid camera head, back in 1952.

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**The Final Imperative: Affordability**

When we say that you can rig up a quite complete system for less than half the price of other high quality 16mm cameras,

you may

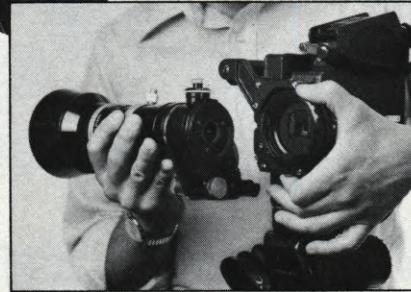
be astonished.

So initially were the many pros who have since discovered that they needn't spend a fortune to own a system which can help them build one.

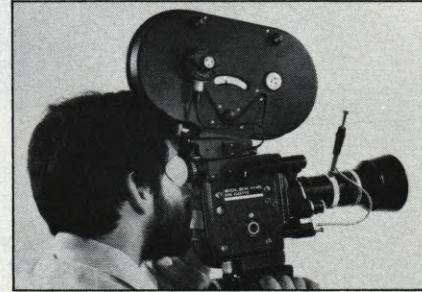
We urge you to inspect the Bolex EBM carefully before you purchase any other camera. And set the perfection of Swiss movement into motion for you.

**Bolex...First in sixteen.**

crystal or sync pulse generator. A diaphragm presetting device that lets you focus and frame with full light coming into the flickerless reflex viewfinder. And all the other niceties that help you refine your technique and your results, including:



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# American Cinematographer

International Journal of Motion Picture Photography and Production Techniques

The American Society of Cinematographers is not a labor union or a guild, but is an educational, cultural and professional organization. Membership is by invitation to those who are actively engaged as Directors of Photography and have demonstrated outstanding ability. Not all cinematographers can place the initials A.S.C. after their names. A.S.C. membership has become one of the highest honors that can be bestowed upon a professional cinematographer, a mark of prestige and distinction.

SEPTEMBER 1978

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ON THE COVER: The magnificent funerary mask of King Tutankhamun, found encompassing the boy pharaoh's head and shoulders when the mummy was discovered in its tomb. Fashioned of solid gold, the mask is the most famous piece in the exhibition of Tutankhamun's artifacts now on tour in the United States. It is featured in "OF TIME, TOMBS AND TREASURE", the half-hour documentary film sponsored by Exxon Corporation in conjunction with the exhibition.

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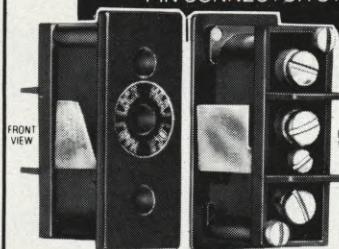
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**our Harj-plug  
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Compare other plugs and connectors against our exclusive self locking ("HARJ-plug") pin plug and female sleeve connector. Since our system is made specifically for (and used by) the theatrical industry you'll find it safer . . . while it costs less.

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product innovation and  
concern for crew safety  
will bring Ferco, Inc.  
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**These OSHA acceptable plugs and connectors are completely compatible with all existing pin plug equipment in the theatrical and video industries.**

The unique design and construction of this system totally eliminate the hassles and hazards of taped connections, and loose, pop-out or crushed plugs that could cause shocks or fires.

Exclusive use of this extraordinary distribution system is not the only competitive edge Ferco brings to their new home (707 Eleventh Avenue, NYC).

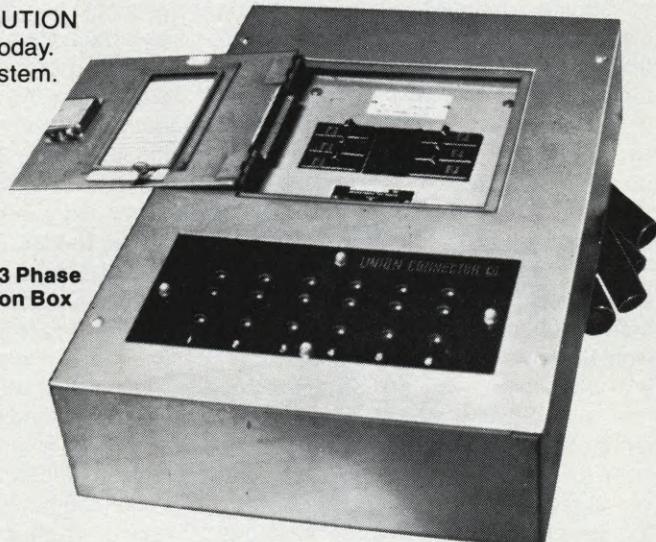
Along with 20,000 square feet of the latest motion picture equipment and the newest lighting department in town.

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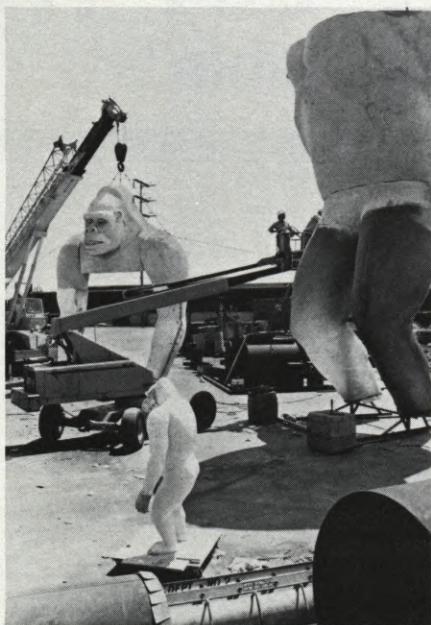
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# WHAT'S NEW

IN PRODUCTS, SERVICES AND LITERATURE



## AERIAL WORK PLATFORM BECOMES NEW CINEMA TOOL

Major film studios have discovered a new tool to aid in a number of production tasks and filming: the JLG Lift® aerial work platform.

One of the first applications of this hydraulic personnel lift came during the construction of the 40-foot model of King Kong for the Paramount/Dino De Laurentiis production of the same name. When the various pieces of the large model were being assembled in California, workers on the platform were able to get up to and around the sides of the great ape to complete necessary connections and touch-up tasks.

More recently, the production crew on Universal's "THE WIZ" put a JLG Lift Model 60F (66-foot working height) to work at New York City locations. According to Walter Way, "the lift suited our needs excellently" for camera work, fastening props, electrical cold work and a number of other high-reach needs. Universal reviewed several different options for completing work at three locations and determined that the JLG product fit their specifications best. "The lift operated smoothly, and it saved money because our crew members could operate it easily," says Way.

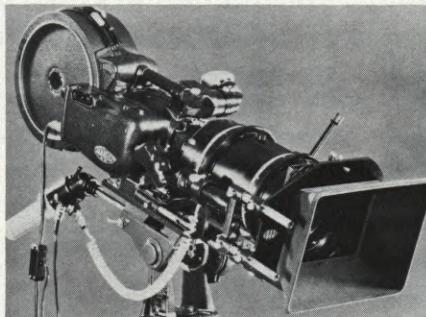
The production crew rented the lift for over two months for tasks at the World Trade Center, the World's Fair and on Eighth Avenue ("Poppy Alley" in the film). Supplier was Furnal Machinery Company of Carlstadt, New Jersey.

One of the major reasons for this

equipment's applicability to the motion picture industry is its maneuverability. All movements of a JLG Lift are controlled from the work platform by one person—travel forward or backward, movement up and down, telescope in or out, and rotate 360 degrees continuously in either direction.

A wide variety of JLG lift models is manufactured by JLG Industries, McConnellsburg, Pennsylvania.

Photo courtesy of Dino Di Laurentiis Corp.



## ARRI 35BL SERVO ZOOM MOTOR

A 12V/DC servo zoom drive motor, available as part of the 35BL production camera system, was announced by Arri-flex Corporation, Elmsford, N.Y. The drive offers the ultimate in perfectly controlled smooth zoom movements and mounts on the 35BL Bridge Plate accessory.

Various geared rings are supplied for either the 25-250 Angenieux and the 25-250 Cooke Cine Varitol, or the 20-120 Angenieux and 20-100 Cooke Varitol.

The control for the servo motor is in the form of a grip with a mounting adapter which can be attached to the camera or to the tripod handle. Zoom speeds are variable over a ratio of 480 to 1 (approximately 1 second to 8 minutes). The grip's upper cone-shaped section has a thumb recess which rotates to control zoom-in, zoom-out and zoom speed. The servo system senses variations in mechanical load and electrical power and compensates automatically. Thus, zoom speeds are perfectly controlled and deliberate changes in speed are accomplished smoothly, in exact and instant response to control setting.

A separate control on the grip pre-establishes maximum zoom speed. With it, the operator can pre-determine the fastest speed needed for the zoom and

concentrate on the smooth, "feathering" of the effect. The 35BL Servo Zoom Drive Motor operates from 12V/DC supplies, which may be the camera battery pack or a separate supply.

The Arri Servo Zoom Drive and accessories are available from authorized Arri-flex Dealers under Cat. # 311-650 thru 311-654. Prices range from approximately \$2100.00. For further information, write Arriflex Corporation, 1 Westchester Plaza, Elmsford, N.Y., 10523.



## FRAME COUNT CUEING SYSTEM

Utilizing today's highly reliable and sophisticated electronic components has permitted Carter Equipment Co., Inc., 15430 Condon Avenue, Lawndale, Ca. 90260, to manufacture the CE-FCC-2 Frame Count Cueing System. The use of this unit on both optical and continuous contact machines at speeds up to 800 feet/minute in all film formats offers a laboratory the opportunity of handling negative and preprint materials without the necessity of mechanically notching or placing metallic tabs.

The Frame Count Cuer tape reader/film counter unit signals cues (light change signals) at proper locations along the length of a motion picture negative as it is transported through a motion picture printer. Locations are measured from a sync mark at the start of the negative and are recorded as "milestone" (sync to scene change) or "batch" (scene to scene change) distances. These distances are punched into an 8-channel 1" wide paper tape in a BCD format as either feet and frame or frame only information. This tape is read one location at a time and the location stored and displayed in the memory display.

As the film is transported through the printer, frames are counted and the film counter incremented (or decremented, depending on transport direction) accordingly. The FRAME COUNT MAXIMUM thumbwheel switches set the counter for the number of frames per foot, according to the film type being used in the printer.

Two more sets of thumbwheel switch-Continued on Page 927

# it may look the same, but there's a big difference

The new Swintek Mark 2L-dBS® transmitter and Mark 50A-dBS® receiver may look familiar on the outside, but big things have happened to the internal components, all significant enough to warrant a new name—the Swintek dBS® System.

Among the advantages offered by the Swintek dBS System is the virtual elimination of "buzz noises," those annoying sounds caused by arc lights, electronic equipment or other sources of interference that heretofore have been the nemesis of sound stage and location wireless recording. Now, with dBS, a cleaner, crisper and higher-fidelity audio recording is available.

Additionally, dBS increases the signal-to-noise ratio by at least 15db. Quite an achievement in itself when you consider Swintek already offers a signal-to-noise ratio higher than any other wireless microphone system in the industry.

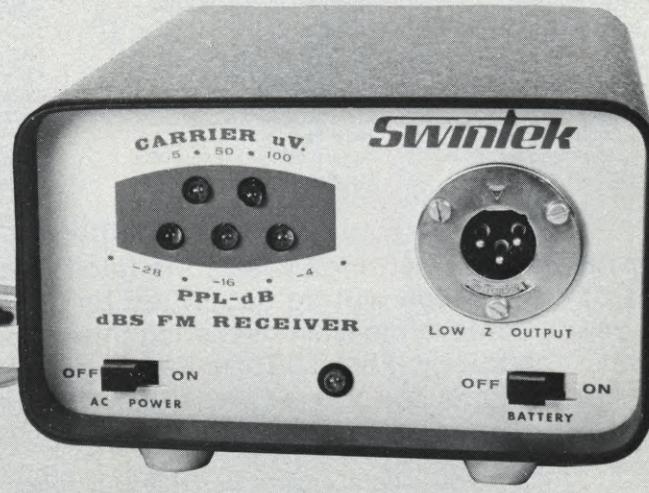
Still another advance offered by dBS is the increased dynamic range (the quietest to the loudest recordable sound without distortion)

without resorting to the less efficient compression method. Swintek has utilized the compander method, widely used in hi-fidelity sound under the trade names of Dolby and DBX, by modifying and combining it with the exclusive Swintek narrow band technology. The result is interference-free sound even when using any number of Swintek systems in frequencies as close to each other as 50kc.

The new Swintek dBS System has been successfully field tested at ranges up to 1500 feet in adverse recording conditions. And, it is the only system offering two audio inputs in the transmitter simultaneously—one accepting any musical instrument, the other, dialog or singing.

Swintek has always been synonymous with the best and most reliable wireless sound. Now, with the additional advantage of the dBS system, Swintek is wireless sound so excellent it can be intercut with sound from hardwire shotgun microphones.

**The Swintek dBS is currently available in the Mark 2L transmitter and the Mark 50A receiver. It will soon be available in other Swintek models, including the famous handheld and Hitchhiker. Please write or call Frank Kelly for additional information.**



*alan gordon enterprises inc.*



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# SMPTE Technical Conference and Equipment Exhibit

Oct. 29-Nov. 2, Americana Hotel, New York City

Featuring:

## The SMPTE Exhibit

A 211-booth exhibition of professional film-making and television equipment. This is the only place in the world where you will find such a wide variety of both motion-picture and television equipment under one roof. Every type of film and video equipment will be on display.

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Ampex Corp.  
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Arriflex Corp.  
Belden Communications, Inc.  
Bell & Howell Co. Professional  
Equipment Div.  
Berkey Colortran  
Bolex (U.S.A.) Inc.  
Robert Bosch Corp.  
The Camera Mart Inc.  
Canon U.S.A., Inc.  
Century Precision Cine/Optics  
Chyron Telesystems  
Cine 60 Inc.  
Cinema Products Corp.  
Coherent Communications  
CMX Systems, Division of Orrox Corp.  
Commercial Electronics, Inc.  
Comprehensive Service Audio-Visual  
Inc.  
Comprehensive Video Supply Corp.  
Consolidated Video Systems, Inc.  
Convergence Corp.  
Dolby Laboratories Inc.  
Eastman Kodak Co.  
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Hollywood Film Co.  
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Image Devices Inc.  
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Kliegl Bros.  
KLM Associates, Inc. & Old Delft  
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Lipsner-Smith Corp. & Research  
Technology Inc.  
Listec Television Equipment Corp.  
L.T.M. Corp. of America  
Lowel-Light Mfg., Inc.  
L-W International  
Macbeth  
Magnasync/Moviola Corp.  
Marconi Electronics Inc.

Matthews Studio Equipment, Inc.  
M B I, Inc.  
Magna-Tech Electronic Co., Inc.  
Micro Consultants, Inc.  
Micro Optics Mechanical ApS  
Microtime, Inc.  
MM Editing Systems, Inc.  
3M Company - Magnetic Audio/  
Video Products Div.  
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Motion Picture Enterprises, Inc.  
Motorola  
Multi-Track Magnetics, Inc.  
Nagra Magnetic Recorders Inc.  
Neumade Products Corp.  
Norton Associates, Inc.  
NTI America, Inc.  
Nurad, Inc.  
O'Connor Engineering Laboratories,  
Inc.  
Pace International Corp.  
Pako Corp.  
The Perf-Fix Co.  
Peterson Enterprises, Inc.  
Philips Broadcast  
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Samcine Sales Ltd.  
Racal Zonal Ltd.  
Photomec (London) Ltd.  
The Association of British  
Manufacturers of Photographic,  
Cine and Audio Visual Equipment.

## The Technical Sessions

Four full days of meetings where the latest technological developments in motion pictures and television will be described by the world's leading experts in their fields. This year's conference will cover such topics as Laboratory Practices, Film Production, Sound Technology, Film-to-Tape and Tape-to-Film Transfers, Special Effects, Editing, and Applications for Videodisk, Video Production, Television Satellites and Digital Television.

*Plus social events, activities for spouses, coffee club, and lots more.*

*For Information, write or call today.*



**Society of Motion Picture  
and Television Engineers**

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# ARRI NEWS UPDATE



PUBLISHED PERIODICALLY BY ARRIFLEX CORPORATION

• ELMSFORD, N.Y. 10523

• SEPTEMBER—1978

## T1.3 Angenieux 16-44mm ZOOM LENS FOR ARRI 16MM CAMERAS

In addition to the many varifocal length lenses available, there is now another new choice, the new T 1.3 (F 1.1) Angenieux 16-44mm Zoom lens. The lens is available in Arri Bayonet steel mount and fits all 16mm Arriflex cameras equipped with a bayonet receptacle.

The characteristics of special interest are high quality—equal to very fine, fixed focal length lenses—and very high, T 1.3 speed—an aperture never before available in a zoom lens.

The basic 16-44mm zoom lens is part of an optical system that includes a Retrozoom and a Tele-Attachment. These are complex, highly corrected systems in their own right. They convert the basic lens either to 12-34mm or 52-75mm respectively with apertures of T 1.4 and virtually no loss of image quality.



Angenieux high speed T1.3 is the fastest zoom lens available. Range of the basic lens: 16 to 44mm. Recommended as equal to prime lenses. For all 16mm Arriflex cameras with bayonet receptacle.

### SPECS FOR 16-44mm

Angular Field:	43° to 16°
Photometric Aperture:	T 1.3
Shortest Focusing Distance	5 feet
Minimum Object Field	7.3" x 9.8"
Overall length: (From Camera Flange)	5.1"
Maximum Overall Diameter:	3"
Weight:	2 lbs.
Filter Size:	Series 9



ARRIFLEX Corporation is now located in this modern building, at One Westchester Plaza, Elmsford, New York.

## ARRIFLEX CORPORATION NOW A SUBSIDIARY OF ARNOLD & RICHTER, MUNICH, WEST GERMANY

Ever since 1951, when Arriflex cameras first came to America, they were imported and marketed by an independent company, which for 27 successful years represented A&R's interests in America.

In line with long range planning and influenced by the changes in the value of the U.S. Dollar against the D Mark and the substantial increases in labor rates in West Germany, Arnold & Richter has acquired the former Arriflex

Company of America as of April 1, 1978 and changed its name to Arriflex Corporation.

The new Corporation is located in a modern building at #1 Westchester Plaza, Elmsford, N.Y., a pleasant 45 minute drive from Manhattan. Volker Bahnemann will continue as president of the new company. The entire former staff, including Richard Schreibmann, National Sales Manager, Frank Carlsson, Operations

(continued on page 2)

## NEW ARRI N/C BATTERY FOR 16SR/16BL/35BL CAMERAS

Arriflex Corporation is now supplying their new Arri nickel-cadmium, 12V/4AH Battery for all Arriflex 16SR, 16BL and 35BL cameras. The Battery is also recommended for other Arriflex cameras that have been converted for 12V/DC operation.

The Battery is an advanced development in sealed cell, nickel-cadmium battery technology. Its features include: Large 4

(continued on page 2)



Arri N/C Battery & Charger: Features large, 4AH capacity, 12 Volt output for 16SR, 16BL & 35BL cameras; resilient, impact resistant case and dual, high/low charge rates.

## ARRIFLEX CORPORATION

(continued from page 1)

Manager, and Uwe Gallert, Service Manager, remain intact and will continue to provide expert service, without interruption. Paul Klingensteiner who was president of Arriflex Company of America until his retirement in 1976, has rejoined us as a part-time consultant and will serve as chairman of our board of directors. On the west coast, the Arri service staff will carry on—for the time being, in its present quarters—until new and larger facilities are ready.

It is expected that this important change will in due time bring major benefits and advantages to our customers as we work to shorten the distance between our engineering and manufacturing people and the needs and demands of the American market.

### More About Arnold & Richter

Arnold & Richter, with factories in Munich and Stefanskirchen, West Germany and a staff of over 1200 people, is one of the oldest (founded in 1917) and the largest manufacturer of professional motion picture equipment in the world. A privately held company, it is still owned by the families of its founders.

While it is best known for its Arriflex 16 and 35 cameras—AR developed and patented the first successful motion picture reflex camera in 1936—it is active in many other areas of our industry including the manufacture of lighting equipment, processing machines, printers and editing apparatus. It also operates a major motion picture processing lab, two sound stages and a busy rental department.

This all-encompassing involvement in all aspects of motion picture production has played an essential part in making the Arriflex such a superbly engineered, rugged and reliable camera.

## UNIVERSAL CRYSTAL CONTROLLED MOTOR FOR ARRI 16S

In addition to new camera developments, we are continuously engaged in expanding and up-dating the accessory program for existing cameras especially that of the Arri 16S. Previously, we introduced the precision exposure control (APEC) for that camera.

The latest accessory is the UNIVERSAL CRYSTAL CONTROLLED MOTOR, an all purpose drive system which provides the following range of operations:

#### 1) Crystal Sync:

Accurate crystal controlled speeds of 24/25 frames per second for sync sound shooting. Pilotone output is provided as well.

#### 2) External Sync interlock:

The motor can be "slaved" from another sync signal, allowing multi-camera synchronization.

#### 3) Variable Speed:

Range of 10 to 50 fps via built-in control.

#### 4) Single Frame:

single frame operation at maximum 1 frame per second with 1/25 second exposure time (additional trigger cable required)

#### 5) Forward/Reverse:

Built in forward/reverse control in every operating mode.

#### 6) Automatic Shutter Stop:

Once pre-aligned, it stops the camera always with the mirror shutter in the viewing position.



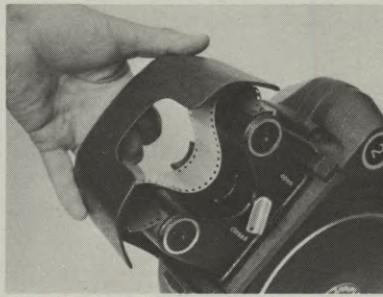
12V/DC Crystal Controlled Motor for Arri 16S: Virtually universally useful—Has automatic shutter stop and operates at 24/25 fps sync speed; Variable speed 10 to 50 fps; Single frame; Forward & Reverse, and more.

#### 7) Remote Start/Stop:

The standard Arriflex 11-pin accessory plug provides for a series of auxiliary functions including remote stop/start via an accessory cable.

Like all new developments, this motor is designed for the new standard 12V/DC power system. When used on an Arri 16S with 100 ft. daylight spools, only a 12V battery is required. Using 400 ft. magazines however, will require a new 12V torque motor or converting of the existing 8V torque motor to 12 volt. This inexpensive conversion can be made by any qualified service department.

## LOOP PROTECTOR FOR 35BL MAGAZINES



The 35BL Loop-Protector/Carrying-Handle

We now have in stock, the new loop protectors for Arri 35BL magazines. These sturdy units are designed not only to keep the exposed, visible portion of the film load safe from being damaged, but they also serve as a carrying handle and as protectors for the relatively sensitive magazine throat assembly. To insure against costly mishaps, every 35BL magazine should be equipped with one of these units.

## ARRI N/C BATTERY

(continued from page 1)

ampere hour capacity; long service life; sealed cells; resilient, impact resistant moulded case with handgrip and loops for shoulder or belt straps; safety fuse to help safeguard cables and camera circuits from accidental electrical shorts and special provisions for High/Low charge rates. The Battery is expected to drive cameras as follows: Arri 16SR; 4,000 feet; 16BL; 1,600 feet and the 35BL; 2,000 feet.

The Battery is designed to work with a matched High/Low Charger which is capable of bringing a discharged Battery up to 80% of capacity in 6-7 hours or less. At 80% of full capacity, the Charger automatically switches over to a low rate. The Charger also switches automatically to accommodate itself to either 120V/60 Hz or 220V/50 Hz power lines.

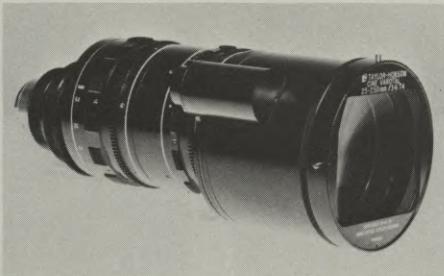
## ARRI EXCLUSIVE AGENT FOR COOKE VAROTAL ZOOMS

Arnold & Richter has just negotiated an exclusive worldwide distribution agreement with RANK TAYLOR HOBSON for the TAYLOR HOBSON COOKE 20-100 and 25-250 VAROTAL zoom lenses in ARRIFLEX mounts.

The Cooke 25-250 and 20-100 are among the most advanced zoom lens designs available today and are specifically intended for application in 35mm feature, television and commercial production. VAROTAL zoom lenses have a variety of exclusive design features, most prominently the "sealed unit" design with fixed front element which allows the fitting of sun shades and filters directly in contact with the front of the lens. The two lenses are matched in their optical performance and use multi layer anti reflection coatings for reduction of flare and improved shadow area penetration.



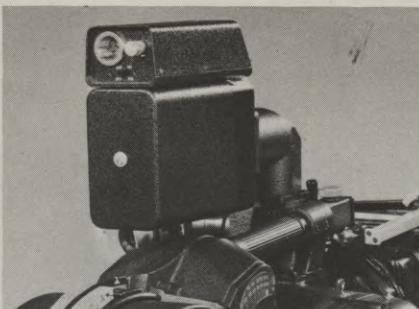
Taylor-Hobson Zoom Lenses: Top: the Cooke Varatal T3.1, 20-100mm; Bottom: The Cine Varatal, 25-250mm. Either lens used by itself will provide the most used focal lengths needed in 35mm feature film production.



### OPTICAL SPECIFICATIONS

	20-120mm	25-250mm
Horizontal Field	58°-12°	47°-5°
F Aperture	F 2.8	F 3.6
T Aperture	T 3.1	T 4
Length (from flange)	320mm (12.4")	286mm (11.2")
Largest diameter	145mm (5.75")	103mm (4.4")
Focus range	Inf. to 27"	Inf. to 60"
Image field (dia.)	27.2mm (Academy Aperture)	27.2mm (Academy Aperture)
Weight	4 Kg (9 lbs)	4 Kg (9 lbs)
Object W.	@ 3.5"/3.3"	89mm (3.5")
		84mm (3.3")

## VIDEO COUPLING FOR ARRI 35BL



Video Monitor System for Arri 35BL. The miniature TV camera is coupled to the viewfinder optics and mounts on the 35BL as shown.

A video system for simultaneous monitoring of the reflex finder image is now available for the Arriflex 35BL camera. Using the same miniature black and white TV cameras as the 16SR video coupling, the installation requires no camera modification whatsoever. The 35BL video coupling is supplied complete with high sensitivity NUVICON camera, miniature power supply, split-image finder and can be installed on any Arri 35BL in just minutes. Generally the video system takes its operating power right from the camera battery. Video output is suitable for direct feed to a standard monitor and/or most video recorders. Suitably placed monitors make remote viewing easy and practical in all kinds of situations.

## PHOTOKINA — 1978

The bi-annual Photokina—a World's Fair of Photo Equipment—will be held in Cologne, W. Germany from September 15 to 21st, 1978.

Arnold & Richter will exhibit at their usual large "island" in hall 11, aisle M. The Arri exhibit serves as a showcase for our entire range of products including all 16 and 35mm Arriflex cameras, HMI and conventional Quartz motion picture and TV lighting, editing equipment as well as laboratory, processing and film printing machines. It is expected that as always, new products and accessories will have center stage.

Volker Bahnemann of our Elmsford, New York office, and the entire Arnold & Richter booth personnel would welcome any of you who can make it to this important and informative fair.

## FILM ON THE ARRIFLEX 16SR JUST RELEASED

Continuing an old Arriflex tradition, to use the medium we serve, we have just completed a new information film devoted exclusively to the Arri 16SR. The film is titled ARRIFLEX 16SR-CLOSE UP which best describes its purpose, namely to introduce the camera and its features from concept to application.

Manufacturing and service sequences are used together with actual "in-use" footage to keep the film briskly paced and highly informative. Every foot of film was shot with Arri 16SR cameras. By avoiding all optics to retain optimum image quality for the release print, we hope to tell not only the story of the camera but to a certain extent, show the "state of the art" capabilities of 16mm film.

ARRIFLEX 16SR-CLOSE UP was produced for Arriflex by Vision Associates of New York and co-written and directed by Jon Fauer of Vision Associates and Volker Bahnemann of Arriflex Corporation. All requests for screenings should be written on company letterhead and directed to Arriflex Corporation, Elmsford, New York.



On camera: Jon Fauer of Vision Associates shooting sequences at the Arnold & Richter plant in Munich. Footage is part of the new film: ARRIFLEX 16SR: CLOSE UP.

## ARRIFLEX CORPORATION TWX TERMINAL

Our Arriflex Corporation offices in Elmsford, N.Y., are equipped with a modern ITT TWX terminal. It puts us in direct communication with Arnold & Richter in Munich and with our branch office on the west coast. The machine also makes our offices accessible from similarly equipped centers anywhere in the world. Our TWX number (and 'answerback') is: 710-565-1203/ARRIFLEX EMFD.

## THE ARRI 16SR IN MEDICAL-SURGICAL FILMING

In June, three films produced by the Surgical Film Division of Davis & Geck (a department of Lederle Laboratories) were given Gold Leaf Awards at the John Muir Film Festival. The Festival is devoted to films made for the continuing education of physicians and paramedical personnel. The prize winning films were made by Ned Lewis, Film Production Manager; Leo McGovern, Cinematographer and Paul Kestner, Sound Recordist working under the supervision of Charles Raill, Director of Professional Relations.

Davis & Geck, producer of surgical sutures and hospital specialties, makes films as a contribution to the medical profession.

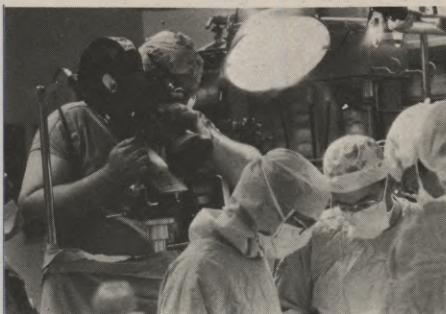
The Film Division makes about 35 new films a year. The productions are co-sponsored by Davis & Geck and one of several prominent medical associations. Subject matter and authors are selected strictly by the association involved. The productions are financed entirely by Davis & Geck.

A substantial portion of DAVIS & GECK's budget is devoted to making teaching films for the profession. The film crew takes it as one of their special challenges to make each year's output better than the last, and to maintain both quality and volume in spite of ever increasing costs.

Ned Lewis gave an example of how they take advantage of every economy that they can devise: Not long ago, they installed a fine, horizontal editing table in their studio. They found that this machine could handle film so safely, that they could do their editing right on their camera original footage. Not that they recommend this procedure to others—but in their specialized work, they found this unorthodox practice feasible and economical. They estimate that they save about \$20,000 per year on raw stock, lab costs and manhours.

With their limited budget and growing costs, how come the film crew went out and bought a sophisticated camera like the Arriflex 16SR? Leo McGovern, Manager for the film crew, answered by talking about some of the special aspects of their surgical films.

In surgery, the camera is positioned up high, over the surgeon's left shoulder. The lens is zoomed in on the surgical field to the point where the camera gets a closer, clearer view than a direct observer would from the same spot. Out of this



Film Division's Leo McGovern at work in Mt. Sinai Hospital in New York, shooting film co-sponsored by Davis & Geck and the American College of Surgeons.

consideration, they pay more attention to camera viewfinders than most. They found the bright, crisp image of the 16SR reflex finder superior. The fiber-optic viewing screen proved to be especially valuable because of the limited light levels in surgery and the low contrast ratios of much of their subject material. It helps the cameraman to find focus quickly and to follow focus without 'hunting'.

Then, they found the automatic exposure control (APEC) on their 16SR 'made to order' for their work. In surgical filming, the cameraman has practically no control of what happens in front of the camera. Often, the surgeon, or a member of the staff, will get in the way of the lights and a shadow falls on the field. Or, the procedure involves work deep in a body cavity. Either way, there is marked fall-off of light. Ordinarily, that leaves the photographer groping for proper exposure. The 16SR automatic exposure control handles this problem nicely by compensating automatically and accurately, all without disturbing changes in picture brightness.

There is also the problem of interrupting shooting to change magazines. An operation requires anywhere from five to eight 400 ft. magazines. Changes have to be fast and they have to be dependable. That is simply because this kind of filming must follow and be subordinate to the surgical procedure, not the other way around. Normally, a good deal of 'editing' is done in the camera. To make sure that nothing vital is missed, the surgeon knows that he must warn the cameraman when he is coming to procedures that are essential to the purposes of the film. At the same time, the surgeon must have every confidence that the equipment is ready and able to follow him. Operations that are filmed this way are generally 'once-only' events. The Film Division has satisfied itself that the 16SR magazines give them the

fast, dependable changes they need. Struggling with a magazine change for even a few seconds too long can mean losing indispensable footage.

Their previous experience has taught the Film Division that every vital function of the camera must be as reliable as engineering and craftsmanship can make it. In this respect, they feel that their Arri 16SR has proven to be everything that they had hoped for.

Davis & Geck provides another related service to the medical-surgical field. They maintain a very busy film library in collaboration with the American College of Surgeons that has some 1400 titles. The library books about 20,000 screenings a year. Davis & Geck has been doing film work in one form or another for some fifty years. It has been a most successful service to the medical profession.

## WESTERN SALES MANAGER



Abbott Sydney, who had been with Arriflex on the West Coast from the very beginning—with the exception of the last few years, when he was active in other areas of the motion picture industry—has rejoined us and has been appointed Western Sales Manager.

The ARRI News Update is published periodically by the Arriflex Corporation. All inquiries for comprehensive technical information or additional copies of News Update should be directed to:

**ARRI**  
Arriflex Corporation

#1 Westchester Plaza  
Elmsford, N.Y. 10523 (914) 592-8510  
OR:  
1011 Chestnut Street  
Burbank, California 91502 (213) 845-7687

# Save money. Buy our very expensive exposure meters.

Owning a Minolta exposure meter—or several different Minolta meters—might be looked upon as expensive. Until you consider how much it could cost you not to own them.

These are not ordinary meters for ordinary photography. They are precision instruments, recognized and used by photographers unwilling to compromise their time or professional standards.

Regardless of function, every Minolta meter is designed for efficiency: fast operation, large easy-to-read scales and careful balance for comfortable, smooth handling. And all use silicon cells for accuracy, speed and proper spectral response.

**The Minolta Auto Meter II** is ideal for general conditions. Its automatic scales give you instant, direct readings of incident light. A wide range of accessories makes the Auto Meter II remarkably versatile. There are reflected light attachments with 10° and 40° angles of acceptance, a selection of special purpose diffusers, enlarger mask and a unique close-up probe.

**The Minolta Flash Meter II** makes strobe work as easy and controllable as available-light shooting. Its versatility is unsurpassed for single readings, cumulative flash, continuous light, or combinations of them all. It has a big, bright, digital readout. And it accepts almost all of the Auto Meter II's accessories.

ings, cumulative flash, continuous light, or combinations of them all. It has a big, bright, digital readout. And it accepts almost all of the Auto Meter II's accessories.

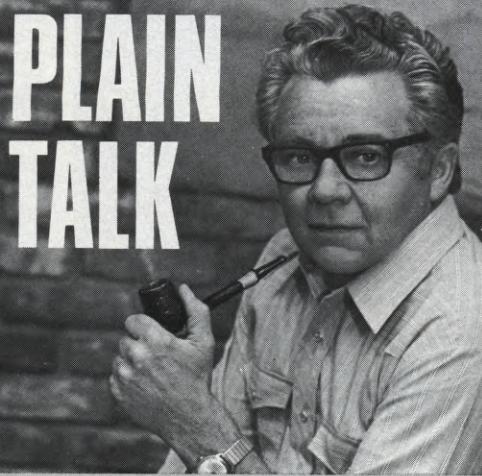
**The Minolta Auto Spot II and Auto Spot II Digital meters** give you ultra-precise 1° spot readings in a 9° field. Two models let you choose between a motorized scale in the viewfinder or a large digital f-stop readout on the side of the meter and an EV readout in the finder. Through the lens viewing lets you pinpoint your subject with extreme speed and accuracy. For critical spot measurement, there isn't a meter that can touch them.

**The Minolta Color Meter** provides precise readings of red, blue and green temperatures from any light source. Easy-to-read scales provide direct MIRED, Kelvin, light-balancing and correction filter information.

When you think of all the time and money a Minolta meter can save you, our very expensive light meters begin to seem a lot less expensive. If you'd like to know more about any of them, write Minolta Corporation, 101 Williams Drive, Ramsey, N.J. 07446. In Canada: Minolta Camera (Canada) Inc., Ontario.



# PLAIN TALK



by *J. Carl Treise*

## Whatever happened to old-fashioned virtues?

We all brag about how far mankind has come during the past 100 years, but somewhere along the road we've lost a few things, too.

Like the desire to do the best we can and unwillingness to settle for anything less.

Look around you today and what do you see?

Everybody's chasing the buck so hard, we don't give a damn about anything else. Forget quality. Forget integrity. Just do it as cheaply as possible, make it as fast as you can, and charge as much as you dare!

Whatever happened to the pride of workmanship? Or the desire to do a full day's work for a full day's pay?

In the old days, a man took such pride in his work that he stamped his mark on it, so the world would know it was his.

Today, few seem to care about product performance or customer service. We aim solely for profit and to hell with everything else. All that counts is the "bottom line."

Whatever happened to our belief in fundamental values and the self-discipline necessary to achieve them?

We don't pretend to have the answers to these questions.

But at least we're thinking about them. Are you?

**TREISE**  
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# QUESTIONS & ANSWERS

Conducted by CHARLES G. CLARKE, ASC, and WINTON HOCH, ASC.



(Inquiries are invited relating to cinematographic problems. Address: Q. & A., AMERICAN CINEMATOGRAPHER, P.O. Box 2230, Hollywood, Calif. 90028.)

**Q** I have three questions:

(1) In recreating the "look" of motion pictures made in 1910-1920 should I try to get that "look" in the camera by using slow B&W film, or should I shoot with ECN and ask the lab to print for the 1920s "look"? Would blowing up 16mm to 35mm increase the granularity and "amateurish look"?

(2) Why, since time began, have most cameras been left-loaded and operated while practically all theater and amateur projectors are loaded on the right side? Is this just habit or tradition, or is there a logical or technical reason?

(3) Did the old Wall and Mitchell 35mm single-system optical cameras as used by Movietone News have "projection sync" spacing (20 frames) between picture aperture and recording galvanometer head, or was an editing and re-recording process involved? In other words, can reversal film be "shot" by these cameras and immediately be projected, after processing on a standard theater 35mm projector with standard 20 frame sync?

**A** Perhaps the so-called "look" of 1910-1920 films was caused by the blue-sensitive film used in those days before the advent of panchromatic and color films. To overcome the deficiency of these films, all the players had to wear a pinkish-white makeup which gave them a look typical of the stage. No artificial lights were used in those days, so most scenes were photographed under diffused sunlight (today's "soft light" style). The original films were not noticeably grainy. Most of the prints you see today are dupes made from old, shrunken prints, most of which were also tinted and toned. This duping exaggerates the contrast and grain and is the main reason for that "amateurish look" you mention. Blowing up 16mm to 35mm creates some grain. In view of the reasons above, it seems unreasonable to ask a lab to create these effects for you.

(2) Remember that the original cameras were all handcranked or spring wound. It is much easier to crank with the right hand. This fact accounts for the cameras being designed that way at first, and the practice has been continued with motor

driven cameras.

The early projectors were also handcranked on the right side. But being much larger, it saved walking around to also thread them from the right side. Just common sense.

(3) This one is quite involved and we need time and research to check all these questions out. We admit to not knowing them all. Perhaps some of our readers would help with the answers.

**Q** I am a senior at the University of Texas studying film production and would like to enter the field, specifically cinematography. Can you suggest how this might be done?

**A** We receive hundreds of similar letters and try to help. From the recommendations we have had from those students who have made it, it appears that the best way to break into the field is through local film and television stations. Film local news events on your own and sell to the local stations. In this way, you gain practical experience. When your work is outstanding you could be engaged to film news and documentaries. Hollywood is loaded with film aspirants which number greatly exceeds the positions available.

**Q** I recently exposed a roll of Super-8 Type A Kodachrome film without removing the conversion filter that is built into my camera. Could you suggest a lab that might be able to salvage the film? It is of a medical nature and cannot be repeated. The film has not been processed yet.

**A** We do not know of any laboratory which can alter the color balance in developing. However, you can have a color corrected print made from your original. This is a usual practice with labs for their printers are equipped with color correction filters. In your case, this method may not remove all the excessive orange hue, but it will improve the color balance. Therefore, have your film processed in the normal manner, then ask the lab to make a color-corrected print. ■

# AT MOVIELAB, 16MM GETS JUST AS MUCH ATTENTION AS 35MM.

We offer **16mm** filmmakers a wide variety of special services. These include **7247** and **Ektachrome** Dailies, preflashing, postflashing and forced developing.

Release printing from **16mm** Liquid Gate internegatives.

**16mm** to 35mm Liquid Gate blowups.

**16mm** to reduction **Super 8mm** magnetic or optical sound release printing.

So - the next time you have a **16mm** film to be processed, take it to Movielab. Because we think as much of **16mm** as we do of 35mm.



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# When you need microphones with "reach," reach for these!



#### CL42S Shotgun System

The CL42S reaches farther and rejects more ambient noise than any other shotgun of its size ever made. Our exclusive line bypass port makes it more directional at low frequencies so you won't have to sacrifice frequency response when you use it on a boom. Diffraction vanes maintain high-frequency directivity to preserve uniform frequency response if the "talent" gets a little off-mike.

Phantom or AB powered, the CL42S comes complete with windscreens, shock mount, carrying case and handle for hand-held applications. And it's rugged.

#### CH15S Hypercardioid System

The CH15S is actually more directional than a mini shotgun mike – in a package that's only 4 inches long that weighs less than 6 oz. Specially designed for boom and fishpole use in TV and motion picture studios, but equally at home wherever working space is small and you have need for a compact, highly directional microphone.

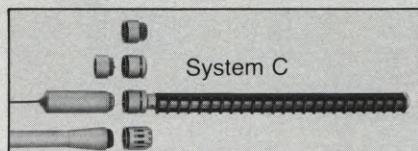
Compatible with phantom or AB power, the CH15S comes complete with windscreens, shock mount and carrying case. And, this microphone is rugged.

#### The Electro-Voice Warranty

Electro-Voice backs up these two microphones with the only unconditional warranty in the business: for two years we will replace or repair your CL42S or CH15S microphone, when returned to Electro-Voice for service,

at no charge – no matter what caused the damage!

We can do this because we build these microphones to meet our standards for performance, ruggedness and durability. We accept nothing less, and if you're a professional, buying a professional quality microphone, you shouldn't either.



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a *gulton* company

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There's a special meaning in these two check marks: *Check and double check*. They sum up our business philosophy. They're so vital to our operation that they are a part of our corporate signature. They serve an important purpose: To remind you that anything you rent from Victor Duncan is as clean and mechanically perfect as skilled technicians can make it. To guarantee flawless performance. To guard against costly production tie-ups. And to keep you coming *back* to Victor Duncan.

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# CINEMA WORKSHOP



By ANTON WILSON

## FILM FORMATS

An old friend recently wrote me a letter containing a small piece of 35mm film he had found among some ancient scraps at an editing house. It was a standard piece for 35mm motion picture film, except that the color image was six perforations high instead of the more normal four perforations. What kind of format was this?

Since the 1890s there must have been over 100 different film formats. Film widths included 3mm, 8mm, 9 1/2mm, 11mm, 13mm, 17mm, 17 1/2mm, 18mm, 22mm, 24mm, 26mm, 28mm, 30mm, 35mm, 50mm, 62mm, 63mm and 65mm to name a few. Perforations were round, square, oblong or slots and ran on one edge, both edges, down the center or a combination thereof. The number of perforations per frame exhibited similar variety. Before even 1898, there were various formats using one, four, five and six perfs per frame, usually on both edges. By the 1920s, two and three perfs per frame were also being used, thus running the full gamut from one to six perfs per frame.

Most interesting is the lack of chronological progression in format development. Some of the earliest formats were strikingly similar to the most modern now in use. For example, in 1897 the Veriscope Co used a 63mm stock with a five-perf pull-down that is not unlike Todd-A-O or Super Panavision 70. By the early 1900s, four-perf, 35mm formats, similar to our current standard, were already being used.

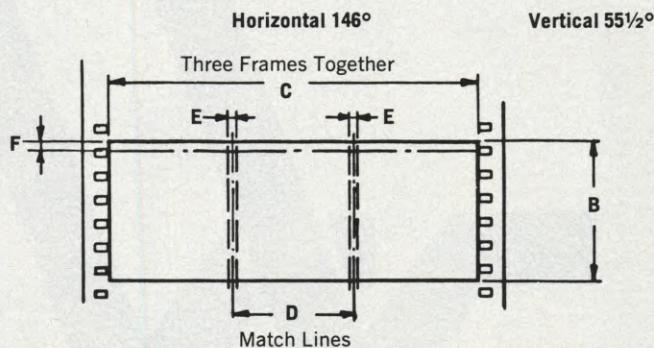
All this variety and lack of chronological development would seem to make the identification of a particular sample of film difficult. However, such is not the case. In most instances identification is quite simple. There is usually some distinctive characteristic or combination of factors that pin point a specific format. The sample I received was no exception. The giveaway was the aspect ratio, which was less than one; that is, the frame was higher than it was wide (due, of course, to the six perf pull-down). The piece of film had to be from a Cinerama release.

Of all formats employed for general release over the almost 100 years of motion picture history, Cinerama has to be one of

## CINERAMA

### 27MM LENS

Angular Field Coverage — Camera Aperture



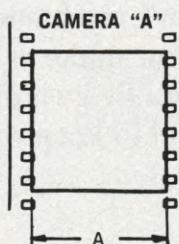
C 2.895" To Perforations

D 0.9478" Between Match Lines

E 0.051" Overlap From Perforations

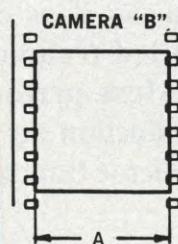
F 0.062" Keep Important Composition Below This Line.

## CAMERA ASPECT RATIO 2.59 to 1



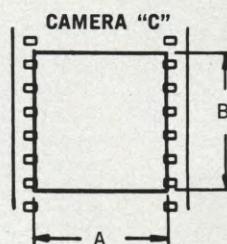
CAMERA A

\* 1.014"  
1.116"



CAMERA B

\*\* 0.996"  
1.115"



CAMERA C

\*\*\*  
1.088"

A

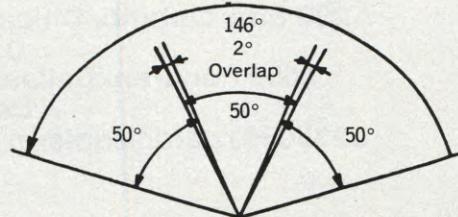
B

### NOTES:

\* Runs into perforations.

\*\* Special Acme Head 0.985"

\*\*\* Because of vignetting "gigolos" projector aperture width is meaningless. There is no specification.



Continued on Page 922

# Canon Academy Award Winning Ultra-Fast Aspheric Prime Lenses for 35mm Cinematography

Specifically designed for professional cinematography, these exciting new lenses are the result of an extensive and painstaking research program jointly undertaken by Canon Inc. and Cinema Products Corporation, in cooperation with the Research Center of the Association of Motion Picture and Television Producers.

Naturally, these lenses incorporate all the latest advances in modern lens technology, including multiple anti-reflective coatings on all elements, floating elements wherever required, etc.

But it is the aspheric property of these lenses that makes them so extraordinary — because aspheric lens design is inherently superior to conventional lens design since it permits the best possible use of all available light.

**And, unlike any other series of high speed lenses currently available for motion picture use, every lens in the Canon series is aspheric.**

## The technological breakthrough

While the theory for the design of aspheric lenses has been known for quite some time, it was not until the advent of modern computer technology and the development of computer-controlled automated machinery that it became possible to design and grind aspheric lenses in such a way as to permit consistent high quality manufacture at a reasonable cost.

Which is what prompted Canon and Cinema Products to launch a development program for a series of ultra-high-speed aspheric prime lenses, all supplied with BNCR-type mounts, and covering the range of focal lengths most used in professional cinematography: 24mm, 35mm, 55mm and 85mm.

A great deal of money, time and effort went into this program. The final results are more than well worth it.

## Aspherics — ideal for filming at all light levels

By causing the marginal rays to be in sharp focus, and, at the same time, rejecting random or spurious rays, the Canon aspheric lenses improve definition and sharpness at the edges and reduce flare when the lens is wide open.

Shooting night-for-night with available light — the aspheric lens wide open — at 25 footcandles and even



lower, with nothing but neon signs and street lamps for illumination, there's virtually no halation. The Canon aspherics just take the light in: penetrating the scene, holding all the detail.

The Canon aspheric lenses minimize uncontrollable flare (with its concomitant loss in contrast and resolution) and improve the definition and contrast of the scene *regardless of variation of light levels within the scene*. Even at the highest levels of illumination.

The result on film is photography that is remarkably clear and sharp, well defined and well balanced, with good color rendition and saturation, especially with regard to flesh tones.

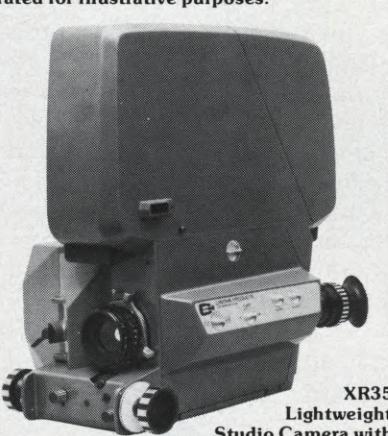
Which makes the Canon aspheric lenses ideal for filming under any and all light conditions. Night-for-night with available light, as well as in broad daylight, or on a well lit sound stage.

## Let your eyes convince you

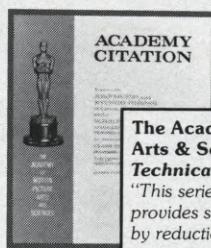
Ask your dealer (or call Cinema Products) to arrange for a screening of our dramatic 35mm test reel comparing the Canon aspherics with other high speed lenses for motion picture use.

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Your eyes will convince you. The Canon aspheric prime lenses are superior to any other high speed lenses currently available for 35mm cinematography.



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Lightweight  
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ACADEMY CITATION

The Academy of Motion Picture Arts & Sciences Scientific or Technical award citation reads:

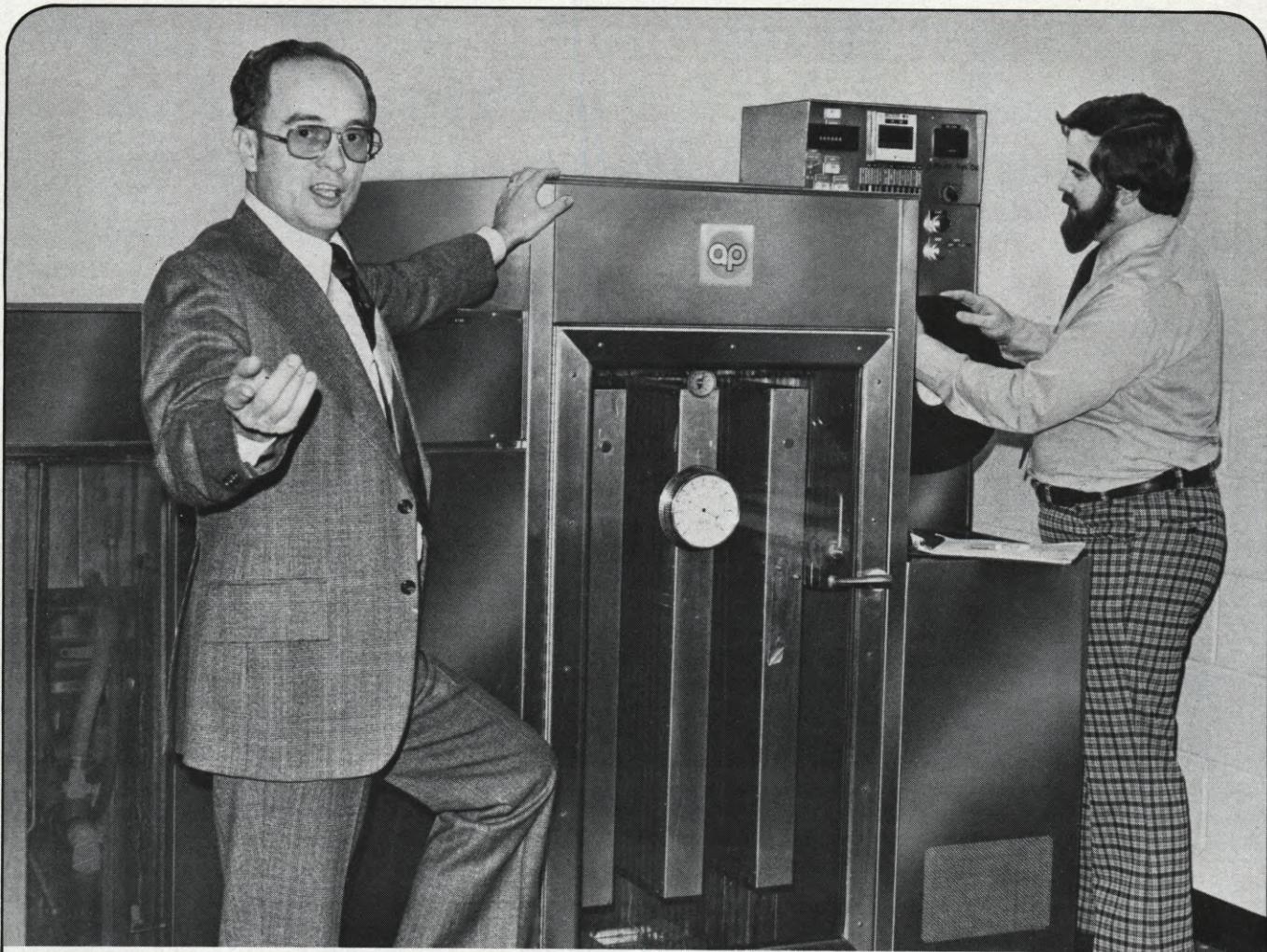
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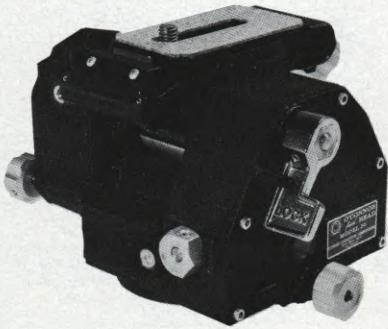
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# O'Connor

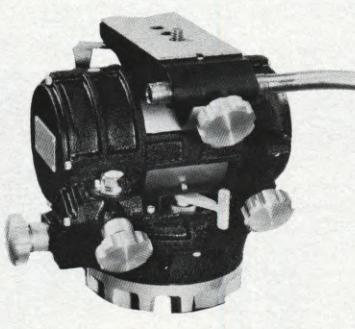
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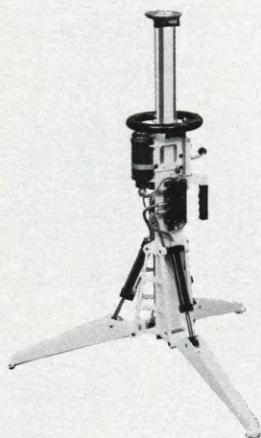
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# THE BOOKSHELF

By GEORGE L. GEORGE

## FACETS OF CINEMA

In a new, revised edition of his classical work, Paul Michael greets the 50th anniversary of the Oscar festivities with an updated **THE ACADEMY AWARDS: A PICTORIAL HISTORY**, an attractive year-by-year record, abundantly illustrated and extensively annotated (Crown \$14.95).

The Pentagon Hollywood connection in the production of war-glorifying movies is intelligently explored by Lawrence H. Suid in **GUTS & GLORY: GREAT AMERICAN WAR MOVIES**. In-depth interviews with filmmakers, technical advisers and top Army brass probe skillfully into the process whereby the popular concept of U.S. invincibility was propagated, until the Vietnam fiasco provided a new approach to the war movie genre (Addison-Wesley \$12.95/6.95).

The contribution to cinema art by surrealist filmmakers may have been small in number, but significant. From Bunuel's "L'age d'or" to Man Ray's "Emak Bakia," their work is fitted within the larger scope of the movement by Malcolm Haslam in his informative and literate **THE REAL WORLD OF THE SURREALISTS**. This superb, large format volume is richly illustrated with remarkable color and b/w photographs (Rizzoli \$35).

Cinema's indebtedness to other media, its place among the arts and its contribution to popular enlightenment are knowledgeably discussed in **CINE-LITERACY**, Charles Eidsvick's perceptive appraisal of the impact of film on society's cultural standards and educational needs (Horizon Press \$14.95, Random House \$7.95).

Leland A. Poague, in **THE CINEMA OF ERNST LUBITSCH**, manages with notable flair to establish the common grounds for the various themes Lubitsch pursued in his Hollywood films. Whether historic dramas, social satires or witty comedies, the director's stylistic concerns are shown to have subtle relationships that Poague scrutinizes from a consistent auteurist point of view (Barnes \$12).

French critic André Bazin, in **ORSON WELLES**, traces the director's life and career (up to Bazin's death in 1958), offering a keen and early appraisal of a

talent that had already produced its major and most innovative works (Harper & Row \$10).

Prof. Deirdre Bair's riveting biography of a towering figure in contemporary literature, *SAMUEL BECKETT* is a sensitive, sharply observant and intimately detailed work. She places, in the context of Beckett's striving for complete control over the production of his plays, his script for "Film," an unusual and provocative movie starring Buster Keaton and directed by Alan Schneider under Beckett's closest scrutiny (Harcourt Brace Jovanovich \$19.95).

An intriguing portrait of the top box office star and his films, *CLINT EASTWOOD: ALL-AMERICAN ANTI-HERO* by David Downing and Gary Herman traces the development of Eastwood's reclusive nature, his total professionalism and the tailoring of roles to fit his personality (Quick Fox \$4.95).

A performer for over six decades, the late Ethel Waters was equally successful in night clubs, on stage and in films. *I TOUCHED A SPARROW* is a reminiscing tribute her friend Twila Knaack pays to the popular actress whom she met on the Billy Graham Crusades (Word Books, Waco, TX 76703; \$5.95).

Among supporting actors who lend credibility and appeal to Hollywood films, Victor Varconi has stood out for many years. Now he tells of his life and career in an appealing autobiography, *IT'S NOT ENOUGH TO BE HUNGARIAN*, written with Ed Honeck, that takes us on a pleasant journey from his native land to the film capital (Graphic Impressions, 2695 Alcott St., Denver, CO 80211; \$8.95).

★ ★ ★

#### THE ART AND CRAFT OF PHOTOGRAPHY

Professional needs of the photographic trade are answered in *PHOTOGRAPHY MARKET PLACE*, a well-organized directory edited by Fred W. McDarrah and now in its 2nd edition. It offers complete and extensive listings of services, facilities, equipment and marketing data available in every part of the U.S.A. A most useful guide to a large market (Bowker \$15.45).

Two basic volumes describing and pricing, for the benefit of specialized collectors, a number of desirable still and motion picture cameras of the last 100 years has been expertly compiled by George Gilbert and published by Hawthorn Books: *COLLECTING PHOTOGRAPHICA* (\$19.95) and *THE*

#### PHOTOGRAPHICA COLLECTOR'S PRICE GUIDE (\$4.95).

Top Hollywood photographer John Engstead assembles in *STAR SHOTS* a superb collection of 370 performers' portraits he made during a half-century career, while reminiscing candidly about his famous sitters' private lives and careers (Dutton \$14.95).

Critical essays on the art of photography and his fellow artists by a controversial pioneer of the medium, Sakakichi Hartmann (1867-1944) are reprinted in *THE VALIANT KNIGHTS OF DAGUERRE*. Edited by Harry W. Lawton and George Knox, text and photographs illustrate the technical and esthetic progress of an emerging art (U. of California Press \$25).

Milton Meltzers's *DOROTHEA LANGE: A PHOTOGRAPHER'S LIFE* deals with the creative work of an unusually gifted woman whose pictorial record of Depression years powerfully motivated public awareness of rural America's plight. An engrossing and amply documented biography, illustrated with classical examples of Lange's work. (Farrar, Straus & Giroux \$15).

★ ★ ★

#### CINEMA ABROAD

Foreign production, of which only a small portion reaches our screens, warrants a closer look at its scope and diversity, as evidenced by several books and brochures at hand.

Hala Salmane, Simon Hartog and David Wilson, in *ALGERIAN CINEMA*, offer basic information on its status past and present, and provide an assessment of its evolution in the context of that country's development from the colonial days to independence (N. Y. Zoetrope \$1.25).

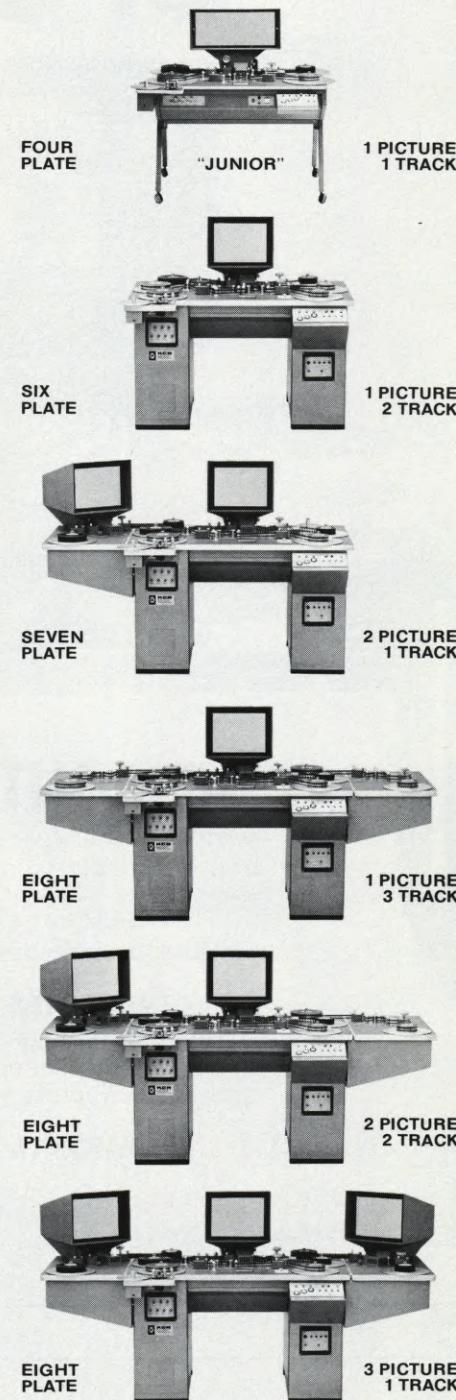
Published by the Swedish Film Institute, *SWEDISH FILMS 1977* surveys last year's remarkably varied production, and presents statistics on current and past film industry activities.

An overview of French film production in 1977 is presented in a substantial study and catalogue of all feature films released in France that year. *CINEMA FRANCAIS*, a bi-lingual text, lists 142 features, with full cast-&-credits and synopses, and includes a directory of producers and distributors. A separate listing compiles the alluring titles of over 100 new films "à caractère pornographique." (Unifrance Films, 745 5th Ave., NYC 10022; on request). ■

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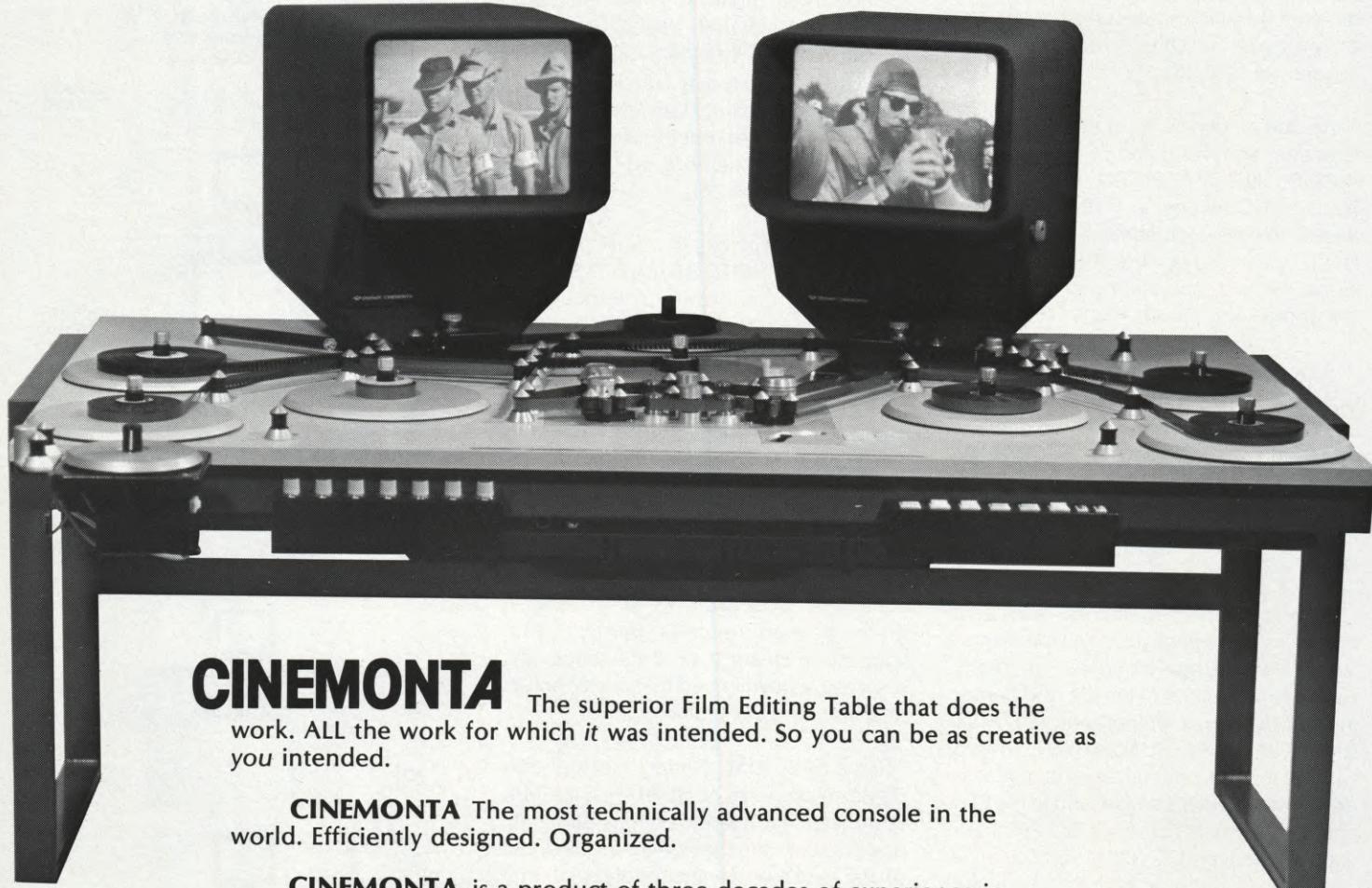


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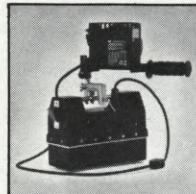
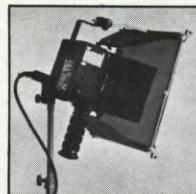
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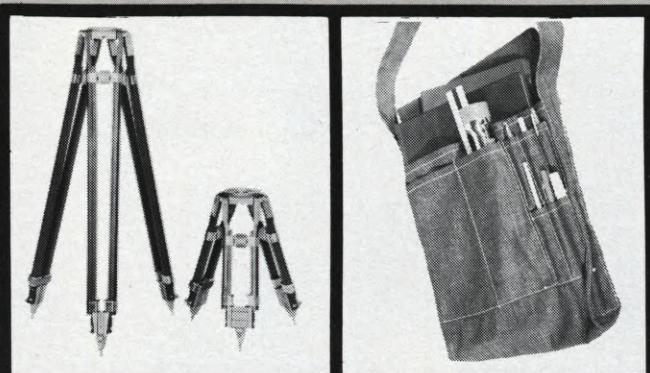
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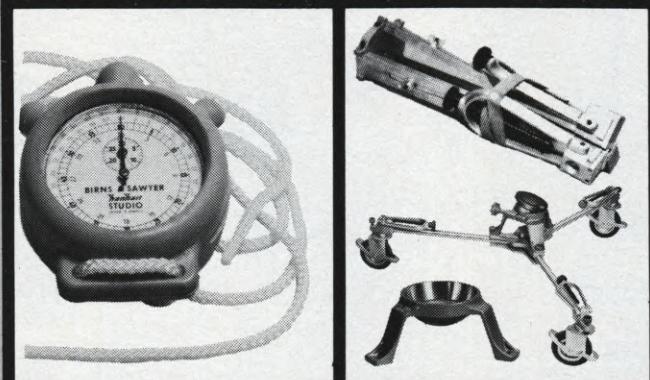
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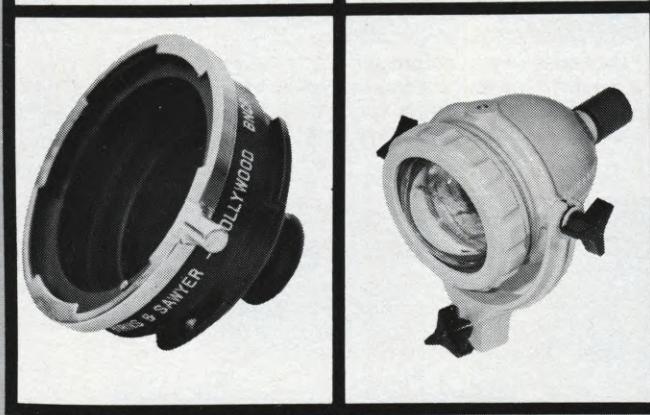
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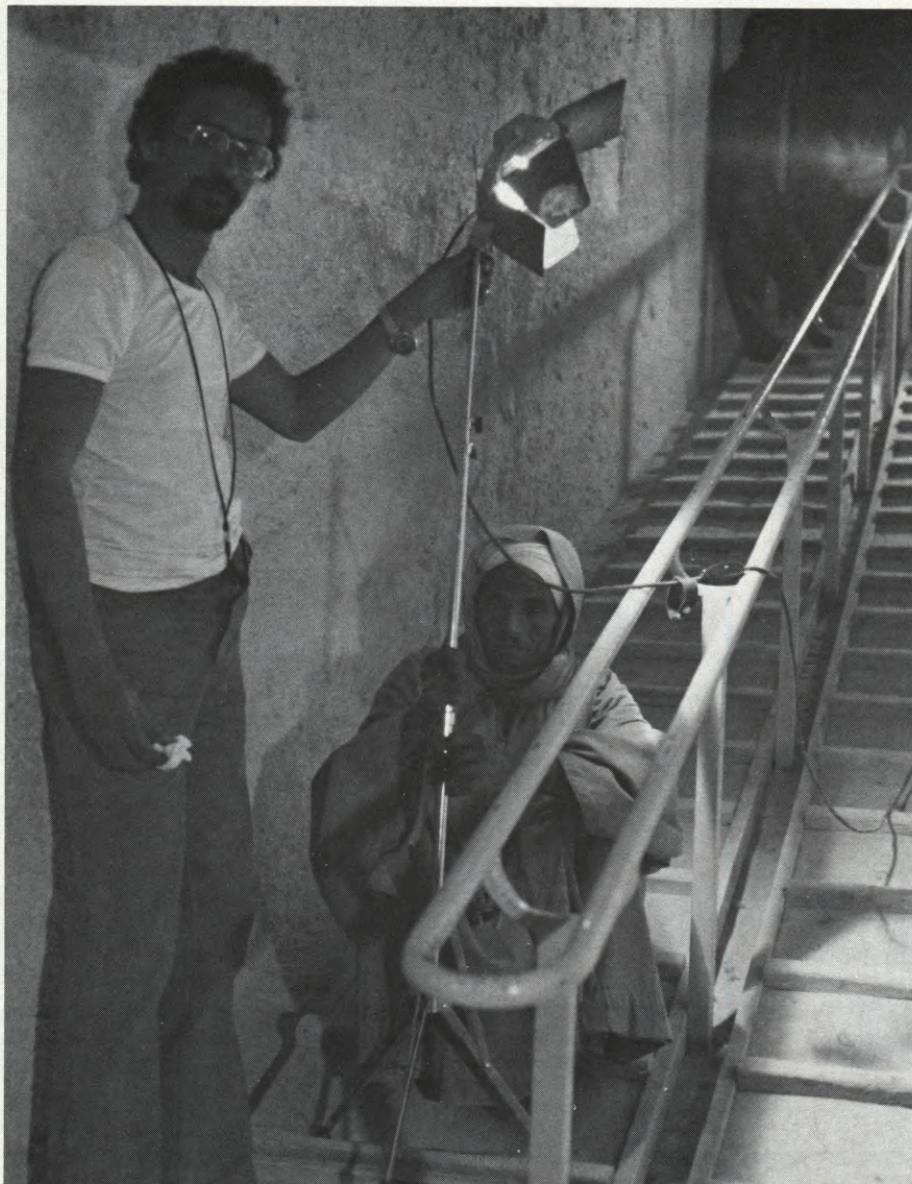
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# OF TIME, TOMBS AND TRIBULATIONS

By JAMES R. MESSENGER  
Director/Screenwriter

Making an Academy Award-nominated film on the priceless artifacts of the fabled boy-pharaoh takes the awe-struck crew from Washington, D.C. to Egypt, a location they find both fascinating and a bit exasperating



Egyptian cameraman Mohamed Gohar shot all the sync-sound segments in Egypt. Here he sets a light in preparation for filming a scene in the entrance passageway of King Tutankhamun's tomb in the Valley of the Kings. (BELOW) Slating a scene during filming of the priceless treasures on display in Washington's National Gallery of Art.

*To stand in the Valley of the Kings in Egypt in the dead of night with thousands upon thousands of stars arching over you and the most complete silence you've probably ever heard enveloping you, there becomes no doubt that this place was made for eternity.*

That is probably the best way I can describe the feel of the mystery that is Egypt. There's something going on there: it's difficult to put one's finger on the emotion that develops when one confronts the greatness of Egypt. Everything is so much LARGER than would be guessed by the so-familiar photographs. Egypt, it hits you, *did* design for eternity. The Ancient Egyptians never doubted that their civilization—the richest and most powerful of its time—would go on forever. It was one of their most basic assumptions. And they may be right. Barring any unforeseen events, the pyramids and many of the other monuments of Ancient Egypt will continue to exist many thousands of years from now.

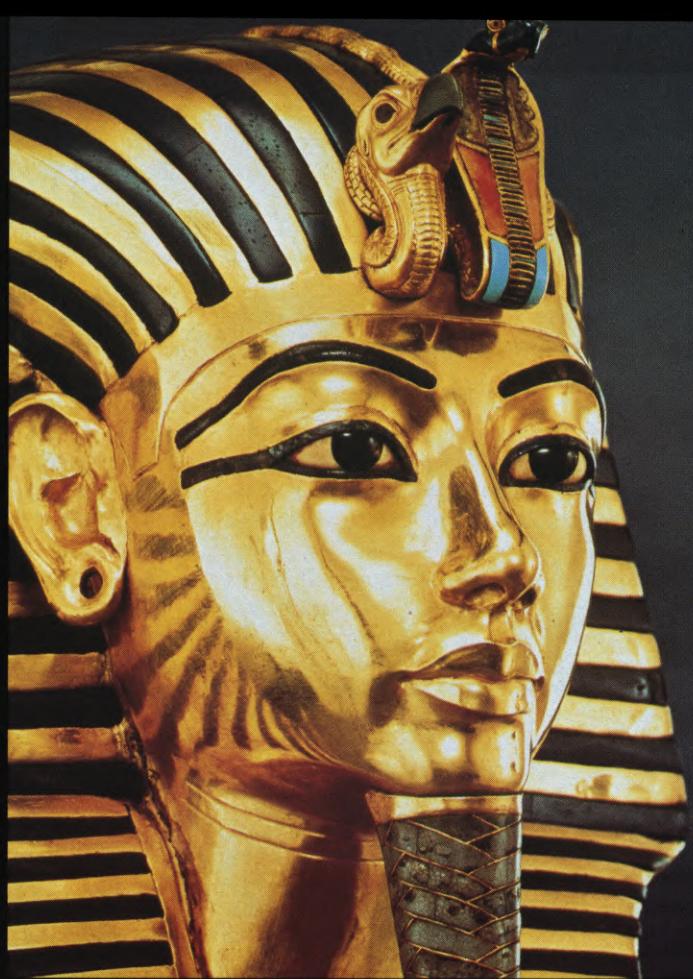
What has all that to do with a film called "OF TIME, TOMBS AND TREASURE: The Treasures of Tutankhamun"? Well, when I was preparing to write and direct this film, I had in mind one thought: I wanted to share my own personal enthusiasm for a magnificent and highly sophisticated culture with other people. But such a task isn't as easily accomplished as one might like. The feel of Ancient Egypt encompasses more than one can convey in a mere thirty minutes, despite the versatile nature of the motion picture medium.

I did have advantages. My first goal in life was to be an Egyptologist. Anyone who has become hooked by the grandeur and mystery of pyramids, and by hidden tombs full of treasure will tell you that Ancient Egypt is hard to turn loose of. So my years of reading and research were surely not wasted when it came time to make the film.

When the Exxon Corporation was kind enough to fund us (Exxon is also underwriting the national tour of Tutankhamun's Treasures along with the National Endowment for the Humanities), and we were able to get underway, we were in no way aware of the adventures and crises that were to confront us.

We began our production at the National Gallery of Art in Washington, D.C. To prevent disruption of visitors to the





(LEFT) One of four miniature coffins that contained the boy-king's internal organs. It is made of beaten gold inlaid with colored glass and carnelian. As shown here, whenever possible, the artifacts were backed up by colored fabric or card for filming. (RIGHT) The superb funerary mask is probably the most famous work of art from the young monarch's tomb. Made of solid gold, it is considered to be a faithful likeness of the king. The eyes are made of quartz and obsidian.

(LEFT) This depiction of the pharaoh on the back of the leopard seems to have been connected with incidents in the passage of the king through the underworld. The leopard is black, the color of darkness, while the king is rendered in gold, symbolizing his association with the sun god. (RIGHT) Solid gold squatting figure of a king, believed to represent Amenhotep III, an ancestor of Tutankhamun. It was found inside the tomb, wrapped in a piece of linen, within a gilded miniature coffin.



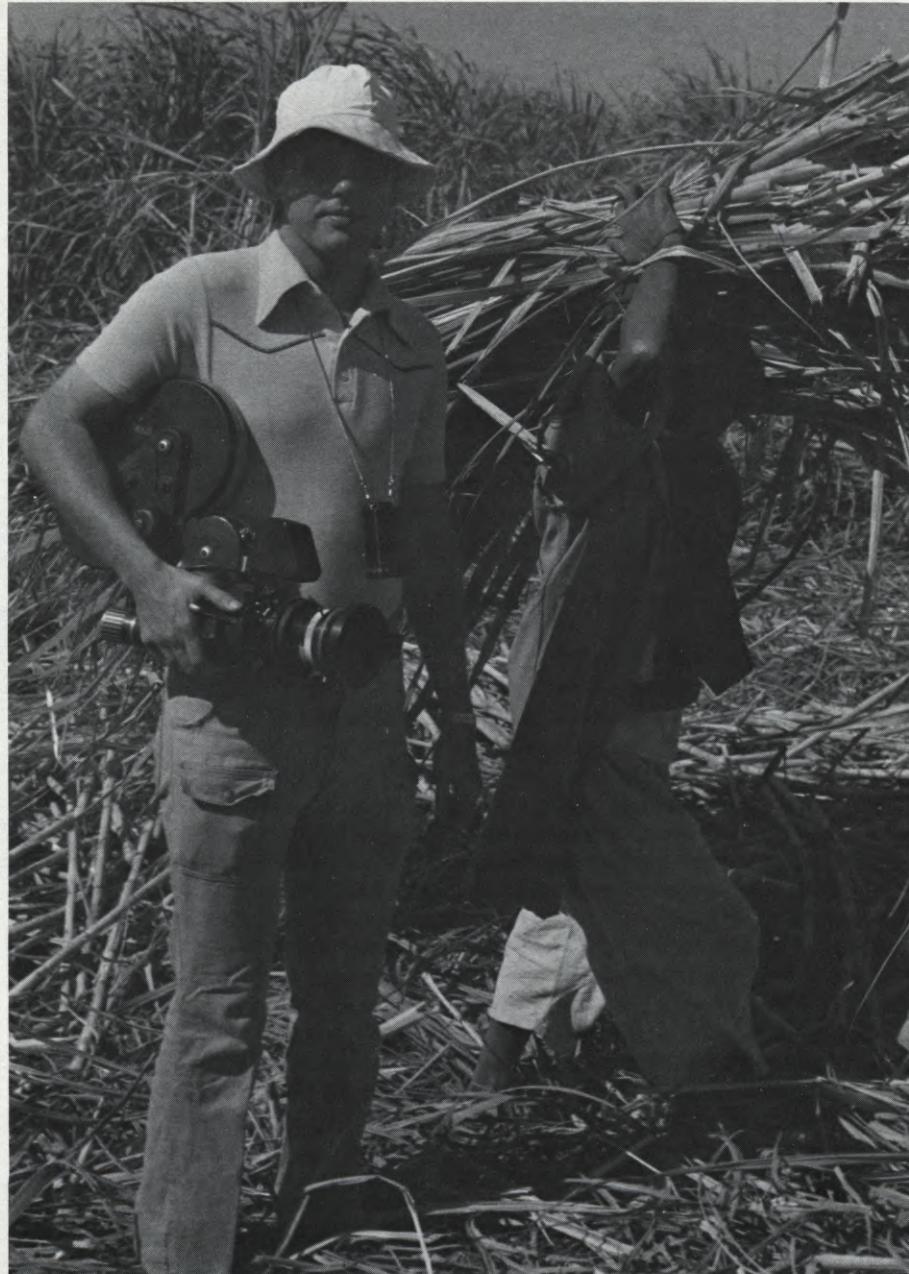
exhibition, we filmed at night. It is some sensational feeling, I can tell you, to have those extraordinary treasures to yourself for nearly two weeks! The silence of the evening provided the experience of encountering the objects as if in the silence of Tutankhamun's tomb itself (please—don't refer to the Pharaoh Tutankhamun as "Tut". To the Egyptians it's like referring to our own first President as George Wash).

But the actual filming was not quite a holiday. Objects that are some 3,300 years old tend, naturally, to be quite fragile. (In fact, my crew met a man while doing some filming in Chicago who had been at the tomb site when it was first opened. As the sealed door was broken

down, there was a noise heard very much like popcorn popping. It was the wood in the tomb cracking due to the sudden change in humidity.) As a result of this delicate nature, we were required to leave the objects inside their protective lucite cases. This caused enormous problems with reflections when it came to filming. On top of that, we were constantly working to avoid heating up the interior of the enclosed cases with our lights. And for creative lighting purposes, we had to solve the problem of lighting while staying at least ten feet away from the cases—this requirement was to avoid any danger of knocking movie lamps over onto objects.

And, in the middle of production, of all

**Director/Screenwriter Jim Messenger in Egypt during filming of sequences showing farmers irrigating and harvesting crops using the same methods their ancestors employed thousands of years ago. Egypt is stark desert, except for the narrow fertile strip extending along the banks of the Nile River and varying from a few yards to 12 miles wide.**



times in my life, I contracted an extremely violent case of the flu. The mummy's curse? Your guess is as good as mine.

Somehow we managed to get all that we needed into the can and were ready for our second phase of production. This was location filming in England and Egypt.

In England, our filming was simple. We were going to photograph Highclere Castle, the ancestral home of the Earls of Carnarvon, a beautiful estate outside of London. The filming was routine, but by circumstance we came across a most peculiar and striking fact. Lord Carnarvon, the sponsor of the expedition which found the tomb of the Pharaoh Tutankhamun, is not buried anywhere near the family cemetery, but on a tall hill with a spectacular view of Highclere Castle and the surrounding countryside.

Lord Carnarvon, you see, was the first member of the Tutankhamun expedition to die from what has become known to us as the Pharaoh's Curse. It was only a few brief months after the finding of the tomb that Carnarvon died—the victim of a mosquito bite. It's reported that at the same moment he died in Cairo, his dog in England gave a terrible howl and died too. But the strangeness of this particular tale is not yet finished. When we were filming from the hill overlooking Highclere Castle late in the afternoon, I turned around to discover the sun setting exactly behind Lord Carnarvon's head. That, my friends, is how the pharaohs of Egypt have traditionally been buried—aligned with the head to the west, the place where the netherworld exists. As I said already, once Egypt gets hold of you, it's hard to let go. Lord Carnarvon, it seems, wasn't going to miss any bets. What if the Ancient Egyptians did in fact know what they were doing? Perhaps it's my imagination running wild over mere coincidence. But to see Egypt is to know there's great magic at work—or at least the remnants of an awfully intense belief.

Egypt is an experience—however good or bad it appears to a particular individual—that one does not forget. Our filming expedition was no exception.

Modern Egypt is fascinating. It's a world caught between the present as we know it, and an overpowering past that is evident everywhere. It's unfair to approach the country with a Western viewpoint. The cultural differences are far too great. Egypt should be seen on its own terms—and, in fact, must be if one is to accomplish one's goal of making a film there. Adequate time is a prerequisite. And that means more, much more time than a hustle-bustle American can normally understand or tolerate.

It takes time to get permissions ar-

ranged. It takes time to get through the marvelously entertaining (and many times dangerous) Cairo traffic snarls complete with horns going full tilt, camels, shepherds with flocks and pedestrians going all directions. Everything takes time. Lots of time.

Egypt suffers from many technological problems that are due primarily to its current economic condition. For instance, the communication systems—phones, etc.—are famous for their lack of operation. This one thing alone increases production problems manyfold, as any practicing filmmaker will be aware. Other deficiencies peculiar to filmmakers are an impossibility of processing 16mm negative filmstock, a lack of film rental equipment, and this sort of thing.

But filmmakers are famous for making do. That's part of the challenge of the business.

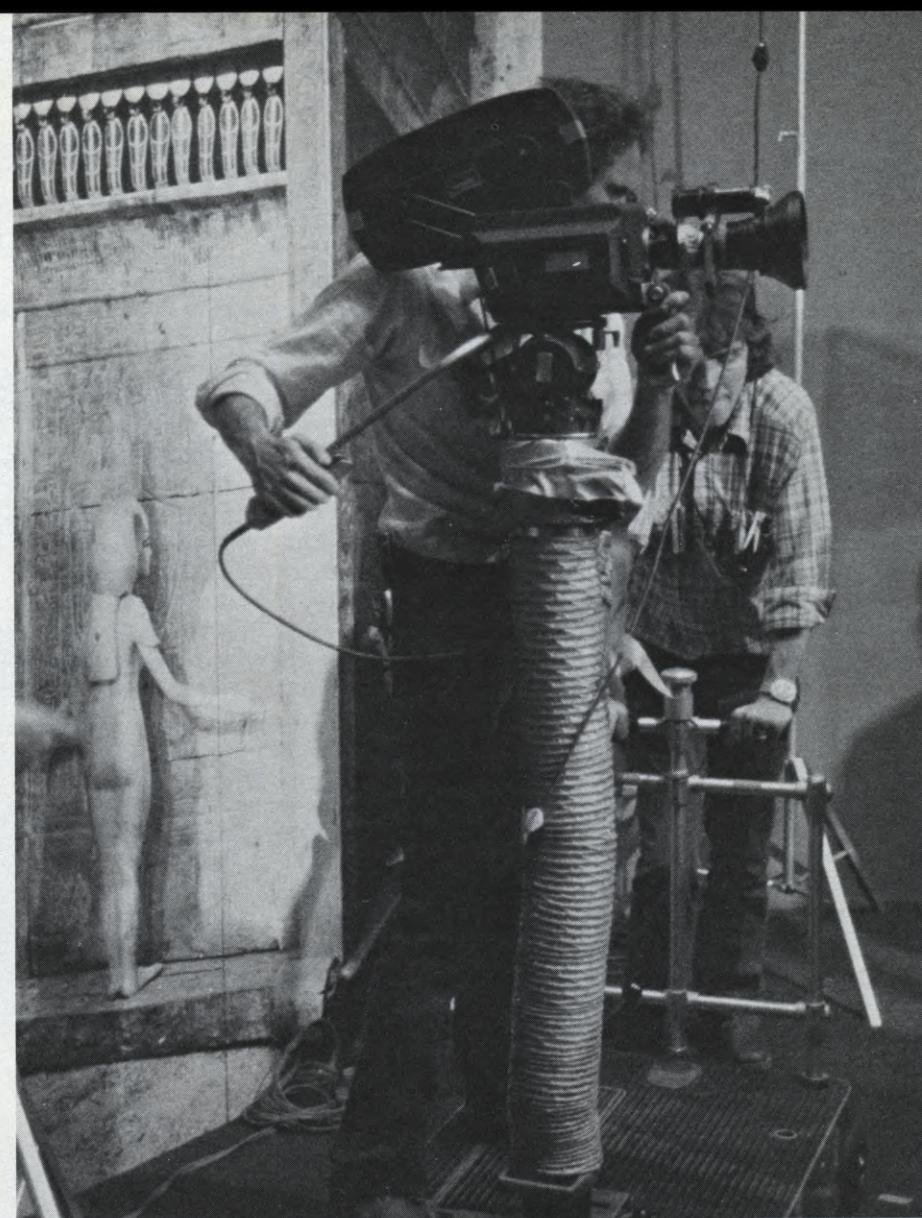
So off we went to film our first major scene. What else? The Great Pyramids at Giza. As spectacle, they're nothing short of amazing. As monuments to a great civilization, they're almost terrifying. Despite all of our cleverness today, no one has actually figured out how the pyramids were built. With theories, we're saturated, with fact there's almost none. By the time of Tutankhamun, the pyramids were already nearing two thousand years old.

To visit the pyramids is an adventure in itself. What seems like thousands of people descend upon you hawking everything from camel rides to souvenirs to "guided tours" full of misinformation, and always complete with a burnt bone or two. This mass of humanity coming at you can be frightening, often exasperating, but frequently funny. To hear the talk, for a price anything is possible in Egypt.

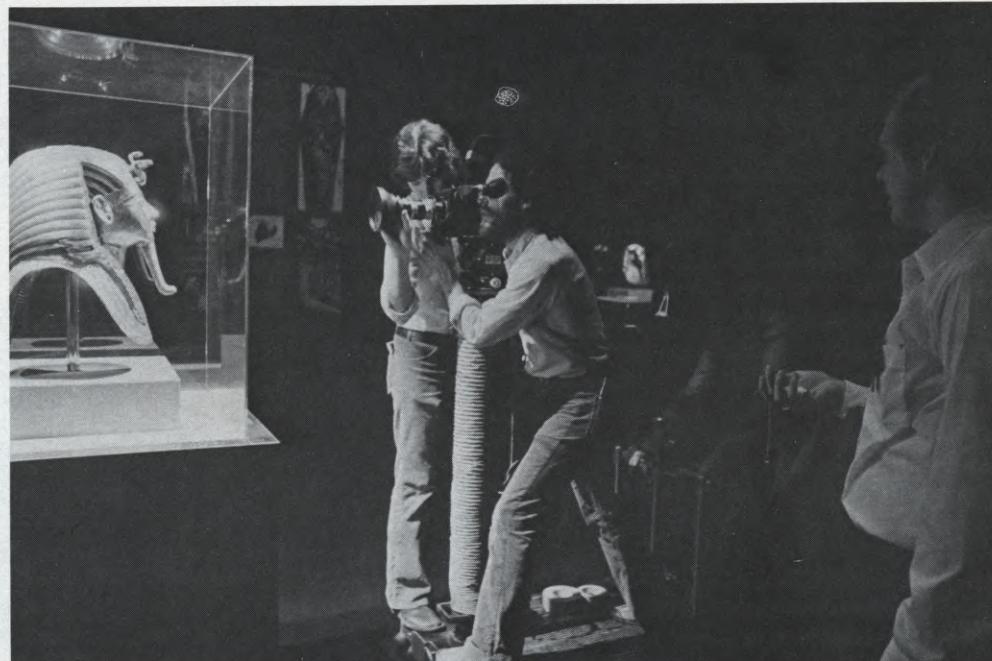
After the obligatory shot of the Great Pyramids, we went even farther back into the past by going to Sakkara where the very first pyramid is located. Even this pyramid, known as the Step Pyramid because of its resemblance to a low flight of steps, is a moment of sophistication. I have in my possession a wonderful turn of the century stereograph of a shepherd driving his flock past the Step Pyramid. On the back of the card are notes by famed Egyptologist James Henry Breasted. He says:

*Most of the tombs in this cemetery are invisible. The thousand generations that lived at Memphis now sleep beneath our feet. On every hand are covered tombs shrouded in the accumulated sands... Yonder swarthy native shepherd little knows how many generations of his ancestors he is*

*Continued on Page 868*



Camera equipment selected for filming the treasures on display in the National Gallery of Art consisted of Cinema Products' CP-16/R camera, Angenieux 10mm-150mm zoom lens, and J-4 zoom control. Operating the camera is Cinematographer Arnie Sirlin, while Rowdy Harrington pushes the dolly. (BELOW) Filming the funerary mask in its case. The object was to do so without picking up reflections.



# PHOTOGRAPHING "OF TIME, TOMBS AND TREASURE"

By ARNIE SIRLIN  
Cinematographer

There's no question that every cameraman keeps his hopes up for a Grade A project to come along and brighten his day. Well, when director Jim Messenger came to my office one day and said, "We got it—now let's get to work.", I just grinned—one of those grins.

So, off we went to the National Gallery of Art for our scouting and pre-production arrangements of "OF TIME, TOMBS AND TREASURE". Everybody was extremely cooperative. Mike Gillespie, the house electrician, ran a couple of miles of cable for me. Bill Summit and his still photography crew offered their able assistance, as well as any of their grip equipment.

Everything seemed to be rolling along fine until I was informed of the lighting restrictions—no more than 1500 watts of light on a single piece, no light could be placed closer than 10 feet and the temperature in the cases containing the treasures could not rise more than 5 de-

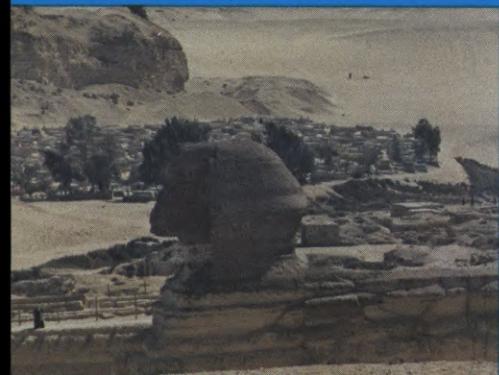
grees. The pharaoh's curse had struck again. The HMI's were unavailable and I was locked into quartz lighting. Talk about paranoia. I used to be concerned with pulling paint off with gaffer tape. Now I would have the dubious honor of having my thousand-degree quartz lights shining down on the cases and waiting for the 3000-year-old gems to start exploding like Jiffy popcorn. I knew it wasn't every day that a cameraman had the opportunity to possibly ruin some of the world's greatest art treasures. And it was a bit of bizarre humor to watch the curators' faces as I told my gaffer to "heat 'em up". Of course, I am pleased to say that not even a close call occurred—thanks to a tight knit crew who worked efficiently and responsibly.

I was told that we could and should expose a good amount of footage in case a theatrical short were to be cut, as well as for general archives, for this important tour. In this set-up, much of the shooting

A dream assignment: to apply the art of the motion picture to some of the most breathtaking art treasures in existence

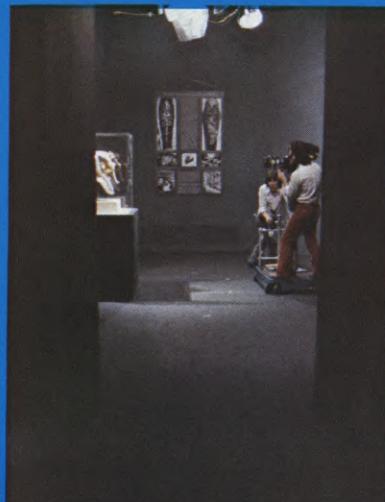
involved intricately designed still life, which would require the use of diopters, thus making film registration a primary concern. And since the decision was made to shoot in 16mm, pin registration seemed the way to go. The only hitch was that I was taking a liking to the CP-16 reflex camera. So I sent the camera back to the factory for a check-up. Then, after running a steady test following its return, I was confident of the CP's performance. I ended up using the CP-16/R, 10-150 Angenieux and the J-4 zoom motor.

The actual nitty-gritty of filming was a potful of challenges. The first was staying awake—we were to shoot from 7 PM to 3 AM for nine nights. The next proved to be the protective lucite cases. Since we were unable to remove the treasures from the sealed cases, the director requested "the no case look", i.e., lose the glare and reflections. So we all showed up in black or were draped when it came time to shoot. It must have been a weird sight to



(LEFT) An unusual view of the famous Sphinx. This massive sculpture was already 2000 years old by the time Tutankhamun became pharaoh. (CENTER) The mysterious Valley of the Kings near Luxor in Egypt. The temperature was well over a hundred, but felt more like 80 degrees. (RIGHT) The unique Step Pyramid of King Djoser. This pyramid was the first known to be constructed. It predates Tutankhamun by several thousand years.

(LEFT) Setting up to film the Colossi of Memnon. These two statues are all that is left of a huge mortuary temple dedicated to Amenhotep III, Tutankhamun's father. (CENTER) Filming at the National Gallery in the middle of the night without enormous crowds milling about gave the crew the feeling of being present in the Pharaoh's tomb itself. (RIGHT) The highly reflective gold surfaces of most of the objects, coupled with the fact that they were in sealed cases, sometimes reduced meter readings to guesstimation.



see a six-foot length of black cloth enshrouding a three-man crew on a dolly rolling along the afterlife treasures of a deceased pharaoh in the middle of the night. Also, in order to mitigate the glare problems, my gaffer Rowdy Herrington and I experimented with the lights until we found a formula which generally was a downward angle of 45-60 degrees to the case, without casting a shadow of the case's mitre joint. We then goboed colored art cards behind the cases and threw a cookie effect on them. Since there was no art director per se, it was more or less a judgment call as to which color art card would best bring out the color in the gems. And whenever I shot wide, I would throw a hot spot on the drab walls behind the artifact which served much better than a backlight or kicker to bring the piece out.

At first, I went with polarizing filters on both the lens and lights. I definitely lost the glare, but I also lost the brilliant gold lustre which expressed the character of the treasures. So all filters were dropped and I just took care, since the stock I was using would record everything.

Speaking of stock, we decided to use 7247 when it still had a bad reputation. But none could compare with it after run-

ning several tests. I would say that another factor involved was that the editor, Paul Lyons, a 25-year film veteran, had been weaned on B&W negative and could capably supervise all post-production handling of the tricky stock. And I believe that the quality of the 35mm blow-up alleviated any and all of the original concern.

Once the set was lit, determining the exposure proved to be another challenge. First, I was unable to insert my incident meter into the sealed cases. And secondly, it is risky business to interpolate a reflected meter reading off a subject which is either pure gold or pure white alabaster. Since the cases and artifacts varied in size and reflectance value, there was really no system for determining the exposure. Sometimes it was a string and tape measure, sometimes an average between reflected and incident, and other times just a plain old guesstimate.

All in all, the project was an enjoyable venture. The filmic challenges ranged from designing a shot where a chisel would break through a wall and zoom to reveal an eye peering into a darkened room, to figuring out how to fly lights 25 feet up on flimsy track over a \$50 million

art treasure. And since the director wanted this to be a dynamic motion picture which would utilize the motion picture medium properly—with constant flow and smooth transition—the movement on this still life in close-up ended up giving quite a workout to the J-4 zoom control, O'Connor head and the cameraman's nerves.

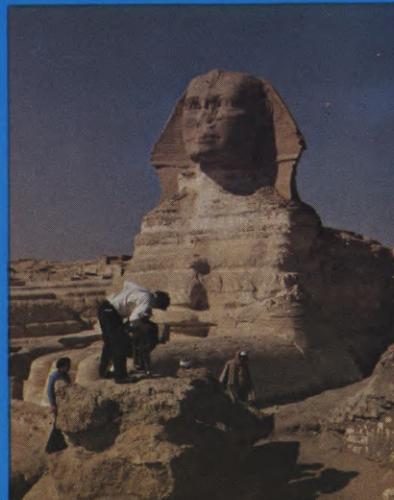
One of the most memorable events was the crew party. It was strangely anti-climatic to relocate from the sanctified atmosphere of 3000-year-old priceless art treasures to the side parking lot next to the Dempster Dumpster. There, in the dead of winter, from 3 AM until sunrise we would lean up against a grip van strewn with empty beer cans and tell the worst jokes imaginable, yet laugh hysterically. Now, how many of you there remember nights like that—too many nights like that?

I would like to express my thanks to two organizations which have saved the day a number of times: Jack Pill's Tech Camera for their cooperation and expediency in sending badly needed equipment on the QT, and R & R Lighting of Silver Spring, Md., for providing lighting and grip equipment that I didn't even know existed. ■



(LEFT) Writer/Director Jim Messenger sets up a shot of the plaster seal impressions from Tutankhamun's sealed doorway. This marked the first time these remarkable funerary seals were filmed in color. (CENTER) An on-the-set visit from Bob Kelley, Vice President of Modern Talking Pictures, Washington, D.C. branch. (RIGHT) Filming statuette of the goddess Selket, one of the most popular and elegant objects in the "Treasures of Tutankhamun" exhibit.

(LEFT) The size of everything in Egypt is awe-inspiring. Building great pyramids and carving sphinxes out of stone in 4000 B.C. seems a rather remarkable feat—especially since we have no idea how they did it. (CENTER) Jim Messenger directing sync-sound sequence with J. Carter Brown in the Valley of the Kings, only to find, upon return to U.S., that sound man had not connected his sync crystal. Editor Paul Lyons spent many hours eye-syncing the footage. (RIGHT) Saved by a kindly freighter crew that towed the filmmakers up the Nile to Luxor when the wind gave out.



# "OF TIME, TOMBS AND TREASURE"—THE EDITOR'S VIEWPOINT

By PAUL M. LYONS

What are the biggest complaints heard from film editors? One—not enough good material to work with. Another—being brought into the production of a film too late to participate in the planning. The award-winning film "OF TIME, TOMBS AND TREASURE" is a prime example of how valuable it is to overcome these complaints.

Serving as both film editor and post-production supervisor, I was consulted during the concept and treatment stages of the project on such matters as the type of stock to be exposed, what lab to use, the use of optical effects and, most importantly, budget and schedule for post-production.

Being a "first string" member of the team during the decision-making process at the outset of the production allowed for avoiding many of the problems associated with filmmaking. By employing twenty-seven years of first-hand experience in editing and all facets of post-production, I was able to assist the writer/director, the camera crews, laboratories, the music editor and all others associated with the completion of this project.

Fortunately, I was exposed to the beauty and feel for the subject matter, not only in script form, but on location at the National Gallery of Art during the entire filming of the art treasures. My advice was actively sought and willingly accepted by both the director and the cinematographer. I gained an insight for the

mood that the writer had set out to create on film.

As with all best laid plans, the unexpected set in on this production. We had allowed for a difference in electrical frequency between Egyptian and American standards and had arranged for compensation in the transfer of location sync

sound. Little did we expect that we would receive notice from our recording studio that there was no sync signal on any of the location tapes. This is not a new experience for me, but was totally unplanned for in our time schedules. It was later learned that the free-lance Egyptian soundman discovered he had forgotten



(ABOVE RIGHT) The crew and "star" of the film. (Left to right) Paul M. Lyons, Film Editor; Arnie Sirlin, Cinematographer; Rowdy Harrington, Gaffer; Steve Raimondi, Grip; Jim Messenger, Writer/Director; Paul Raimondi, Producer. (BELOW LEFT) After filming excavation activities at the Temple of Mut site, the work crew celebrates. Expedition leader Richard Fazzini of Brooklyn Museum beats the rhythm of the dance, while being carried aloft. (RIGHT) Host/Narrator J. Carter Brown helps pull the felluca back up the River Nile after the wind died.



to engage the crystal sync on his Nagra recorder.

The only solution at this point, because reshooting was totally out of the question, was to have the original quarter inch tapes transferred a bit slower than recorded and then begin the tedious task of "eye-syncing" each take on the Moviola. While there was no pattern to this wild recording, the average appeared to be removal of two frames of track after each six words. This process worked out fine, especially with close-ups. But there was that one shot of the on-camera talent, a full screen, six foot head-to-toe person, standing in a darkened stairway inside the tomb. After many hours of back and forth motions, this scene was corrected during the final mix when viewed on a larger screen.

With the stipulation of only so many days of filming of treasures allowed by the National Gallery of Art, and the restriction of no time after the fact for reshooting, our crew exposed as much raw stock as time permitted. I would project the dailies each day right on location for all persons involved in the filming. Being accustomed to shooting ratios of 10-to-1, this was my first experience with 30-to-1 footage to edit. What a joyful chore facing me as editor—a wealth of multiple good takes to choose from!

Following the rough cut screening of some forty minutes, we were advised that the finished film must run 28:30 for television—no ifs, ands or buts. Reluctantly, I pared the footage down and discovered that what was necessary to give the film its final polish would be an original music score. Due to budget limitations, this was not possible. So we allowed sufficient time for our contract music editor, E. Robert Velazco, owner of Musifex, Inc., to create his best work from his vast library of "canned music". He created a music and effects score equal to any original rendition.

So, you see, when the editor is made a part of the planning process before the first frame is exposed, he can add to the production value of any film, be it a sixty-second spot or a full theatrical production. ■

*(ABOUT THE AUTHOR: Paul M. Lyons entered the film industry at the age of nineteen. Employed by Capital Film Labs in Washington, D.C. as a film librarian and apprentice editor, Lyons learned first hand the daily technical operations of a small full service lab. Gaining experience with Creative Arts Studios as an assistant animation cameraman, he moved to Hearst Metrotone as Chief Film Editor and began directing documentary films. He served under Edward R. Murrow as a motion picture/television producer-director at the U.S. Information Agency. Following six years heading up his own production company, Images & Ideas, Unlimited, he became post-production man-*



**Highclere Castle**, the ancestral home of the Earls of Carnarvon. When Tutankhamun expedition sponsor Lord Carnarvon died in Cairo after complications from a mosquito bite, his dog, still at Highclere Castle, gave a terrifying howl and died, as well.

*ager and film editor with Charlie/Papa Productions, where he is now producing, directing and editing in the capacity of Vice President-Production Services. He is a twenty-year member of Local 771.)*

#### **THE MUSIC BEHIND THE MOTION PICTURE: "OF TIME, TOMBS AND TREASURE"**

The background music to the film "OF TIME, TOMBS AND TREASURE" is an interesting phenomenon. It is not, as many assume, an original score. It is music taken from various music libraries, which is musical material prepared for general use in audio-visual presentations.

E. Robert Velazco, the music editor for "OF TIME, TOMBS AND TREASURE", blended the music from these various

libraries to create the compelling and highly popular score.

Much of the music in "OF TIME, TOMBS AND TREASURE" is, however, being used for the very first time. Previously, producers and others responsible for creative application of music in audio-visual projects had refused to use the material for fear that its style would be too controversial for the general public.

The nature of the concept of "OF TIME, TOMBS AND TREASURE" demanded, however, a musical style that carried the flair of the unusual and the mysterious. Thus, after discussion with the filmmakers, Mr. Velazco worked until he achieved the unusual combination of sounds that is the score for "OF TIME, TOMBS AND TREASURE". ■

**Cinematographer Arnie Sirlin prepares to photograph the solid gold funerary mask of Tutankhamun, probably the most famous item in the collection. Writer/Director Jim Messenger observes, while Grip Steve Raimondi (bending over) takes notes.**



## TIME, TOMBS AND TRIBULATIONS

Continued from Page 863

*trampling under foot as he drives homeward his little flock.*

Ah, mystery, romance, flights of imagination! It's nice to know it still exists somewhere.

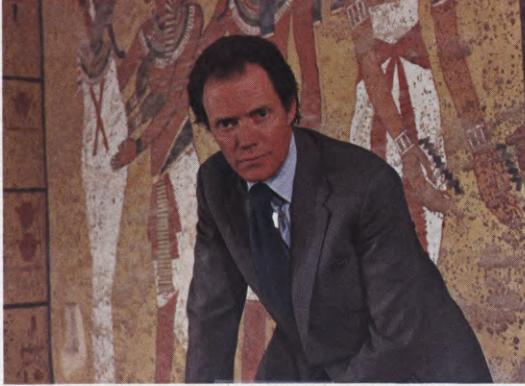
Following the Romantic location filming, we next headed to the Egyptian

Museum, that vast warehouse of antiquity. We needed to shoot a statue of King Tutankhamun's predecessor, the pharaoh Akhenaten. I had assumed the statue to be about three feet high. That was very naive of me. Everything in Egypt, as I said previously, is much larger than one expects. Oh, yes. That's true. My three-foot-high statue was 19 feet tall! That, needless to say, caused a severe complication. We only had a couple of

lights. And the Egyptian Museum is very, very dark. However, ingenuity prevailed and we did manage to get the shot. It's in "OF TIME, TOMBS AND TREASURE." To watch it, it doesn't at all look like it took what seems like forever to film for the fifteen or so seconds we needed.

Having taken over a week to get a minute's worth of film for our show, my associate, Paul Raimondi, and I next headed up river to Luxor. Now in Egypt

(LEFT) The only decorated part of Tutankhamun's tomb is the burial chamber. This fact, plus severe time limitations put upon the crew for filming inside the tomb, made "instant" inspiration a necessity. (CENTER) National Gallery of Art director J. Carter Brown behaved like the true professional he is when filming time inside the tomb was reduced to a matter of hours. (RIGHT) Host/Narrator Brown pauses beside the sarcophagus in which Tutankhamun's mummy rests.



(LEFT) Raising water in the same primitive way that has been used for thousands of years in Egypt. Since the country is almost rainless, its agriculture depends almost entirely on irrigation. The annual flooding of the Nile Valley has been eliminated by construction of the Aswan Dam. (CENTER) The limitation of 1500 watts of light for filming the artifacts inspired the crew to make the best possible use of the illumination that was available. (RIGHT) Cameraman Arnie Sirlin and Gaffer Rowdy Harrington talk over a difficult lighting problem.



(LEFT) Extreme caution in every aspect of filming the treasures of Tutankhamun was necessary, due to the irreplaceable nature of the objects. (CENTER) Cinematographer Arnie Sirlin filming a 360-degree dolly shot of Pharaoh Tutankhamun's solid gold funerary mask. Rather than fighting the lucite cases, they were often used as design by taking advantage of their "crystalline" appearance. (RIGHT) Reflections were a constant problem, but polarized lights and polarizing filters (which would have eliminated the problem) were discarded when it was found they deadened the "life" of the objects.



that means going South. The Nile is one of only a few major rivers that flow North instead of South.

We arrived in Luxor, which is several hundred miles south of Cairo, one late afternoon and settled into a suite in the Old Winter Palace Hotel that had an extraordinary view of the Nile and the huge Luxor Temple. The sun floated gently out of the sky across the river, providing a sunset that tended to knock one over. The weather (in the winter—watch out for summer in Egypt) was the finest I've ever encountered. I don't even know how to make any kind of comparison to it, since I've never run into anything quite so positive in feeling anywhere.

For me, sitting there on our balcony, eating Egyptian oranges of unparalleled distinction, gazing across the Nile towards the cliffs on the West Bank where the Valley of the Kings is located, provided a moment of utter contentment. Everyone has dreams of doing one special thing in his life, seeing some illusive dream in the flesh. This was mine. "Oh, yes," I thought, "the Ancient Egyptians believed this was paradise. It must be so."

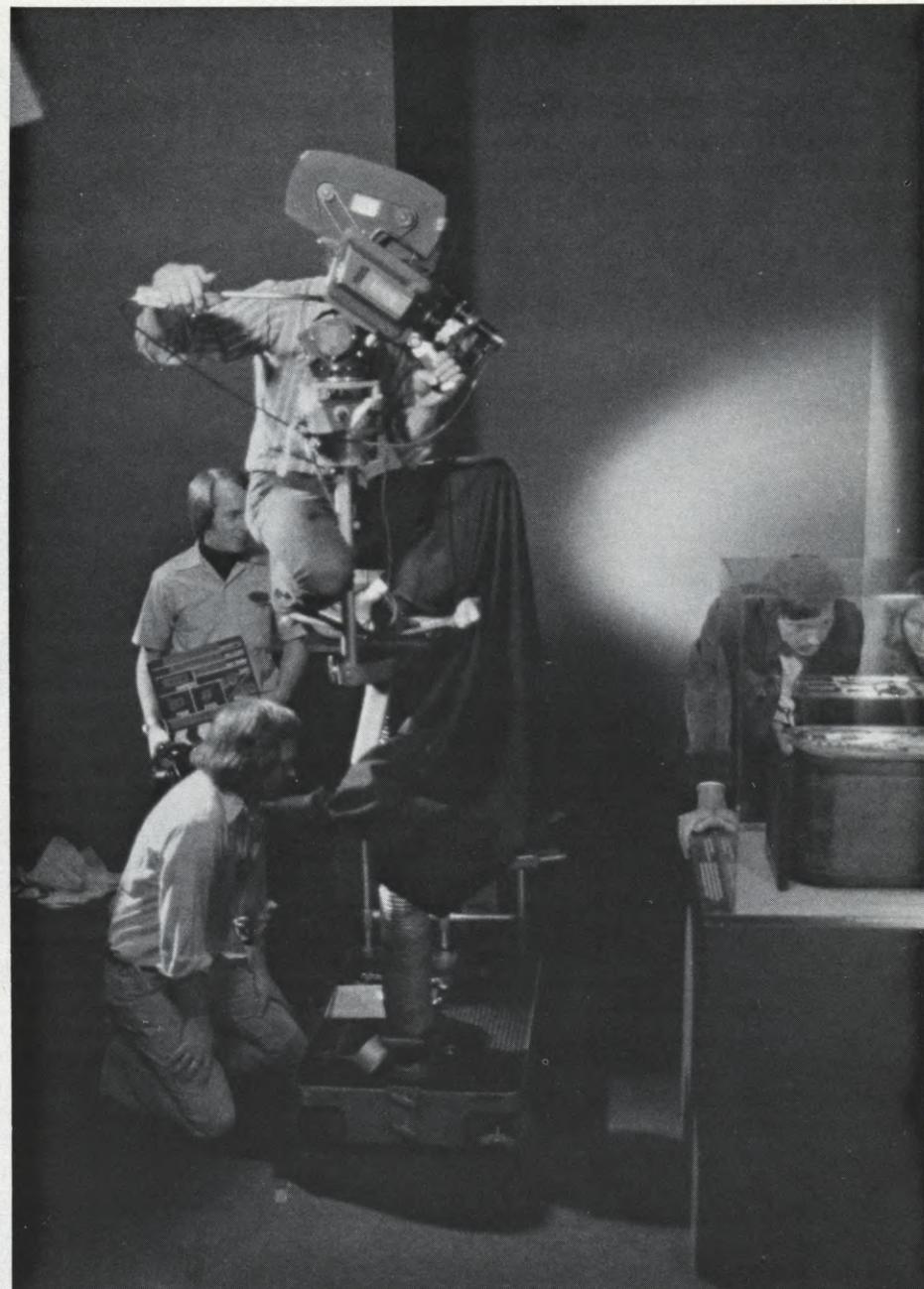
Alas, it emphatically is not, I discovered. During the night swarms of extremely cruel mosquitoes came in through the screenless windows to leave me covered with painful welts that lasted nearly the rest of my trip. I did learn to close the windows. Clever Americans adapt quickly, you know.

But on to filming. Daily we took the ferry across the Nile to the West Bank to begin picking up shots of some of the famous monuments. But seemingly equally distant in time from us were the scenes we filmed of farmers at work: raising water to never-rained-upon fields via a weighted pole or oxen turning a water-wheel; or fishermen slapping oars upon the river to frighten fish into their nets—all scenes that can be viewed both in the tomb paintings of the Ancients and in living Egypt today.

The tomb of our Pharaoh Tutankhamun proved to be quite a bust. For the most part it has only white, unfinished walls and is illuminated through the use of ugly, bare fluorescent light fixtures. Only the tomb chamber itself has wall paintings, plus the sarcophagus and mummy of our King. While fascinating to see, this important location had little to recommend itself for film.

This is just the reverse of almost every other tomb in the Valley of the Kings. Many of the other tombs go hundreds of feet into the walls of the Valley and have every inch of space, save the floor, covered with paintings and carvings.

There is some explanation for this con-



Temperature was an extremely critical factor during filming. Anytime the temperature rose more than five degrees, shooting had to be shut down. Fragile objects, particularly the ones made of wood, would split apart completely should they suffer prolonged exposure to heat. The wood was so fragile that the change in humidity when the tomb was originally opened caused most of the wooden objects to split immediately.

trast. King Tutankhamun died rather unexpectedly—some suspect murder—and there was no time to complete his tomb. In fact, there are many indications that Tutankhamun was buried in someone else's tomb, probably that of a noble.

Another interesting fact is that, despite the awe in which we hold his treasure, of all the Kings buried in the Valley of the Kings, Tutankhamun was the very least.

While we pondered what to do about filming in Tutankhamun's tomb, we forged ahead with other needed material. One location was at the Temple of Mut. Mut was the wife of Egypt's most powerful god, who was called Amun. An American archeological expedition from the

Brooklyn Museum in New York was working at the site. We needed to photograph workers carrying away baskets of dirt and rubble, just as they did in the 1920's. This was easily accomplished since working an archeological site by hand is a technique still employed today to avoid the loss of artifacts and information that might be conveyed by the exact location in which artifacts are found.

Another couple of strokes of luck in meeting archeologists Richard Fazzini and James Manning were that the archeologists knew where the plaster seals to the door of Tutankhamun's tomb were located. (We became the first people to take color photographs of

Continued on Page 928

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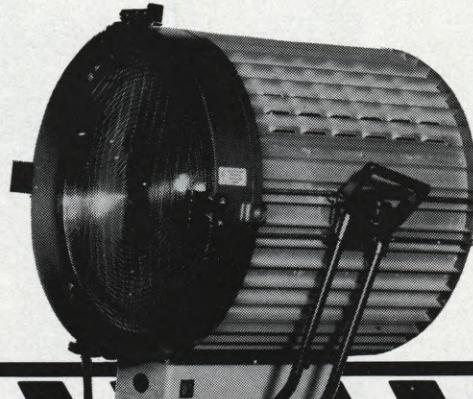
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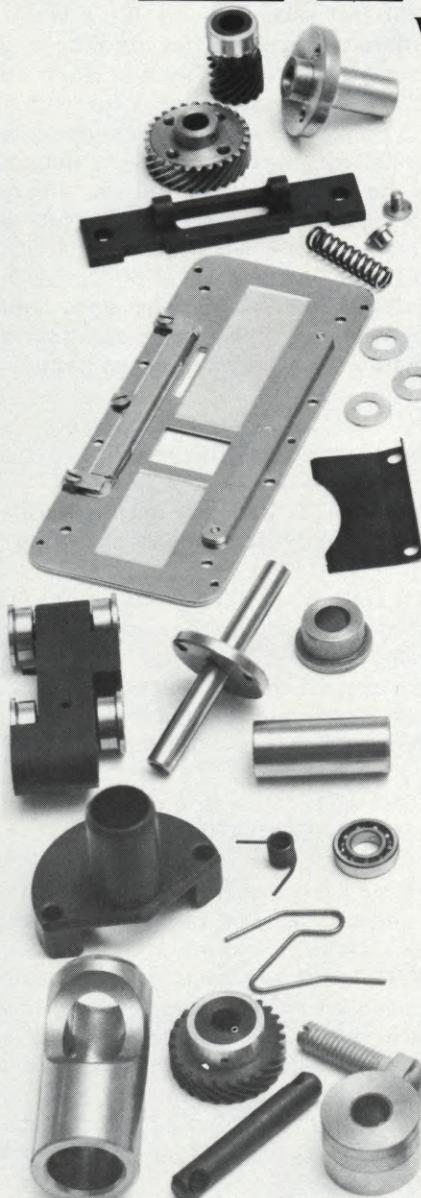
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# AN AMERICAN FILM INSTITUTE SEMINAR WITH GORDON WILLIS, ASC

A brilliant, often controversial cinematographer shares his considerable expertise with student filmmakers of the A.F.I.

As perhaps the most important aspect of education for the Fellows in training as film-makers, historians and critics at its Center for Advanced Film Studies, located in Beverly Hills, California, the American Film Institute sponsors conferences and seminars with top technicians and talent of the Hollywood film industry. These men and women, outstanding professionals in their respective arts and crafts of the Cinema, donate generously of their time and expertise in order to pass on to the potential cinema professionals of tomorrow the benefits of their vast and valuable experience.

In keeping with this tradition, Cameraman's Local 659 (IATSE) sponsors a continuing series of seminars with ace cinematographers. These men—both contemporary working Directors of Photography and some of the now-retired "greats" of the past—meet informally with the Fellows at Greystone, the magnificent estate which is the headquarters of the A.F.I. (West), to present valuable information on cinematographic techniques and answer questions posed to

Gordon Willis, ASC is considered to be a "maverick" by some of his colleagues because of his boldness in breaking the "established rules" of cinematography. But there is nothing haphazard about this seeming nonconformity. A superb technician, always firmly in control of the elements of his craft, Willis seeks to find a distinctive style that is right for each picture he photographs.

them. Very efficiently introducing and moderating each of the individual seminars is "Emmy" Award-winning Director of Photography Howard Schwartz, ASC.

The dialogue which follows has been excerpted from the A.F.I. seminar featuring famed cinematographer Gordon Willis, ASC, whose credits include: "KLUTE", "PARALLAX VIEW", "UP THE SANDBOX", "THE PAPER CHASE", "THE GODFATHER", "THE GODFATHER: PART II", "ALL THE PRESIDENT'S MEN", "ANNIE HALL" and Woody Allen's latest production, "INTERIORS".

A highly intelligent and articulate artist with impeccable technical credentials, the frequently controversial Willis is considered by some within the motion picture industry to be a kind of maverick, because he does not hesitate to break the "rules" of cinematography in order to gain the effect he considers correct for the project at hand. Some of his refreshingly off-beat views are expressed in the following dialogue, which was preceded by a screening of "THE GODFATHER":

PART II", on which he functioned as Director of Photography:

**HOWARD SCHWARTZ:** You all know that Gordon Willis has done a lot to change attitudes toward cinematography—in terms of what is acceptable and what is good. It's a whole different game that he introduced. I think it started with his work on "KLUTE". He stayed away from lighting from the floor, he lit from up high, he had eye shadows that were natural to the situation—and that was a very daring thing to do at that time. You've just seen his work in "THE GODFATHER, PART II". For the first "GODFATHER" film he didn't have any light on the walls. This time he didn't have any light on the walls or the people.

**GORDON WILLIS:** Right. (laughter) You shoot fast working that way.

**SCHWARTZ:** Can you tell us a little about your professional background?

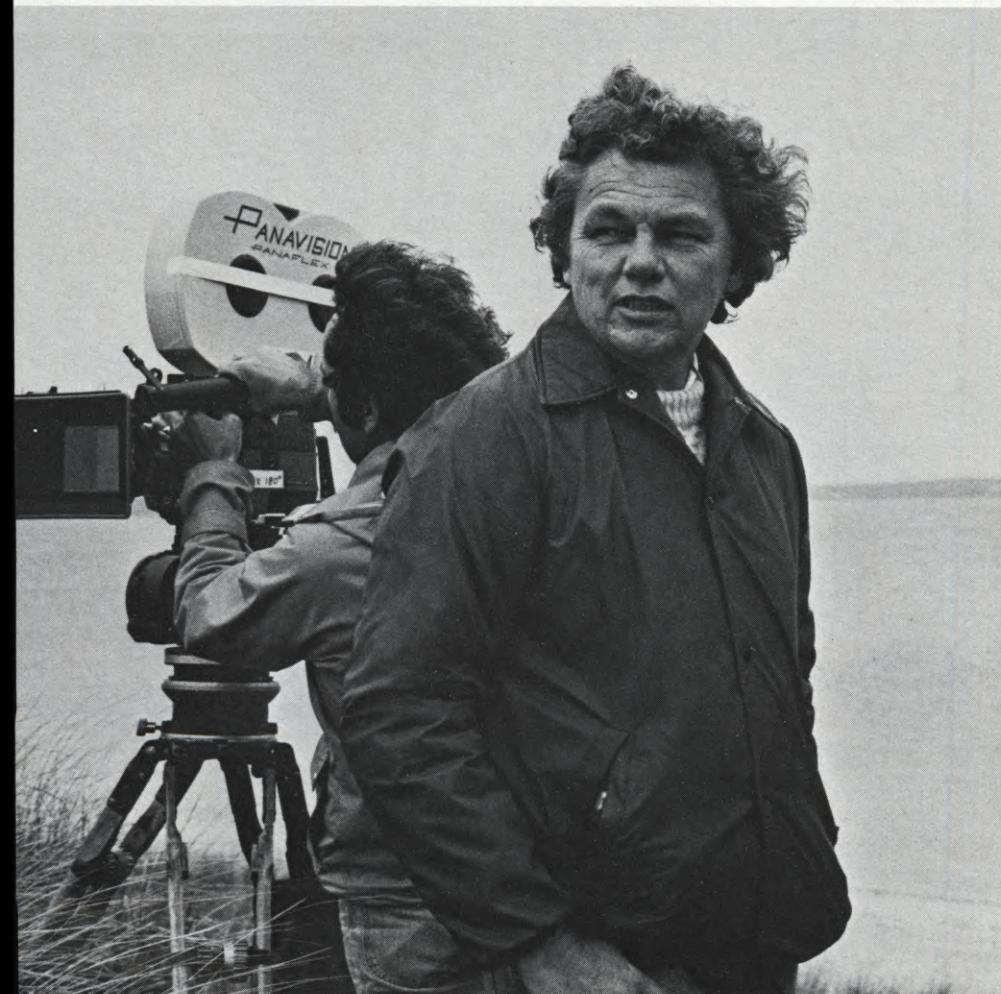
**WILLIS:** Well, I was an assistant cameraman, and I was an operator for a while, and then I finally got into features as a cinematographer. But along the way I shot commercials, industrials, documentaries—that kind of thing.

**SCHWARTZ:** How long did it take you to shoot "GODFATHER II"?

**WILLIS:** Ten months. Actually, there's quite a difference between the two "GODFATHER" movies. If you look at PART I, you'll see that most of the movie takes place in little rooms. But in PART II we were all over the place. We went from Lake Tahoe down to Los Angeles, to the Dominican Republic, to New York, to Trieste, and then to Sicily. I think I left one place out, but that's all that I can remember.

**SCHWARTZ:** What was shot in Trieste?

**WILLIS:** The opening of the movie—the interiors of Ellis Island. There was a big fish market where we did the immigration scenes and it was very much like Ellis Island in the past. And the people that we used there we could not have gotten in America. Then the shot of the Statue of Liberty I made in New York harbor about a year later. (I was the last





(LEFT) Inside Brooklyn bar on location for "THE GODFATHER", director Francis Ford Coppola (center) coaches actors for assassination sequence. The highly acclaimed film utilized many actual interior locations in New York, Hollywood and Sicily. (RIGHT) Director of Photography Gordon Willis, ASC, takes a light-reading inside dimly lit Brooklyn bar. He often uses incredibly low light levels and calculates exposure critically, but resultant negative must be printed precisely correct in order to preserve desired visual quality.

living person on that picture to make a shot.) So the opening is really cut up between New York, Trieste and Rome. There's a little interior shot of the boy inside a room. We did that in Rome.

**SCHWARTZ:** The Ellis Island sequence is interesting in that it's the only interior sequence I've seen you do that had the feeling of being over-lit—which was done on purpose, naturally—in order to get a bleached-out feeling. How did you handle that?

**WILLIS:** All of the material for the opening Ellis Island sequence was shot at T/2.8, and all of it was one stop over-exposed. That's an over-simplification, but on a mechanical level, that's what it was. The rest of the material was not shot overexposed. It was what I call "on key".

**SCHWARTZ:** Did you shoot at ASA 200 or 400?

**WILLIS:** I shot more or less with the normal ASA rating. The contemporary material was a half-stop underexposed—which was normal for the contemporary—but I worked very high on the period material.

**SCHWARTZ:** And how many nights did you spend at the lab getting that color into it?

**WILLIS:** Well, unfortunately, "GODFATHER, PART I" took eight weeks to print, but we printed "PART II" in ten days. Francis Coppola kept making changes. He kept recutting. This was the last I-B printing to be done in the United

States, with dye-transfer work at Technicolor. But every time you make a cut in an I-B roll you have to redo the matrices. That's 2,000 feet. So every time he'd make a change they'd have to make new matrices, and he kept cutting right up to the very last minute. I finally got him on the phone and said: "Are you going to make any more cuts? This is impossible. We can't get it together." He finally finished, and that gave us a week before the film went into release. So we did the best we could, but I was getting tired of shooting during the day and spending the evenings at Technicolor.

**QUESTION:** You say that the prints were made by the I-B process. Does that mean that you used separations for all your timing?

**WILLIS:** Well, to give it to you from the very beginning, I'm a one-light cameraman. I pick a light and a color ratio for the movie, and then ask for one printer at the laboratory. The lab just has to do the same thing every day. They don't change anything, although I change things back and forth. Now, from those dailies—after everything has been cut—they make separations (which are the matrices) and then finally the print.

**QUESTION:** Was that how, in the party sequence at Lake Tahoe, you were able to let it go a bit yellowish, while the water stayed blue?

**WILLIS:** No. All of that was based primarily on the filter pack—the ratio that was used. It was just an overtone of yellow, which I used on "PART I", as well—but if you have a second chance to do some-

thing, you try to improve on it. I feel that I made improvements in "PART II". Also, it was a very sophisticated movie. They jump ahead 15 years in the story, and then jump back to before the first story—so that really, if we'd had the time in the laboratory, there would have been three different tones in the movie. We almost got it, but we ran out of time, as I've explained. I make it as simple for the laboratory as possible, so that they can do everything without a lot of changes. The hardest thing to get a lab to do is to leave what you've been doing alone. I  
Continued on Page 892

Cinematographer Willis checks scene through viewing glass, as camera is set on high parallel for shooting of "GODFATHER" mall sequence on Staten Island.



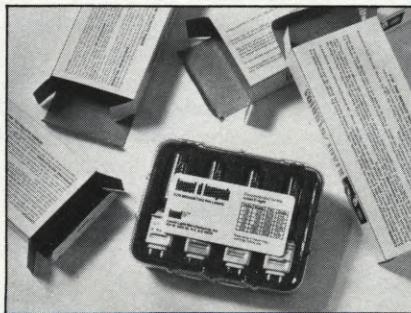


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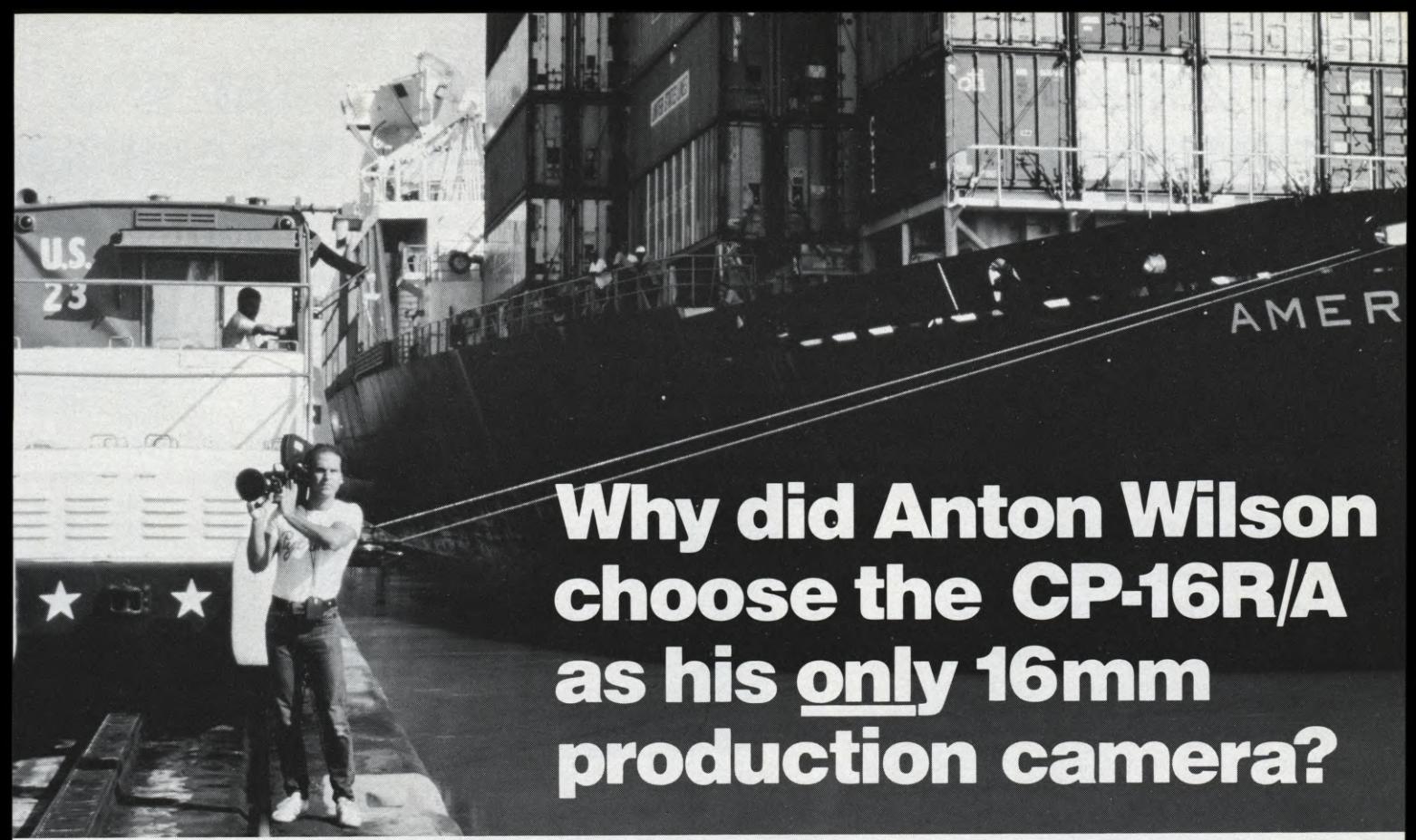
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# Why did Anton Wilson choose the CP-16R/A as his only 16mm production camera?

Known for his daring and inventive camera work, independent producer/cinematographer Anton Wilson has done it all: documentaries, special feature stories for television, industrials... most notably for ABC-TV's *Good Morning, America* and for industrial giants like AT&T, among others.

A former technical director for Arriflex, with a background in mechanical engineering, Wilson is also an authority on motion picture production techniques and equipment design. He is vice-president of Anton-Bauer, manufacturers of power supplies for film and video use, and a contributing editor to the *American Cinematographer* magazine.

## **"The quietest 16mm camera I've ever owned"**

"I first started out with an Arri 16BL, followed by an Eclair ACL," says Wilson. "Eventually I gave them both up. For various reasons, they just failed to satisfy my particular filming requirements."

"My assignments are so diversified and challenging, I need a versatile production camera that can do just about everything! And I find that the CP-16R/A is the only camera in existence versatile enough to do

everything I want—and need—it to do. Best of all... it is the quietest 16mm camera I've ever owned."

## **"CP-16R/A is the only game in town!"**

"The studio-silent CP-16R/A is ideal for all double system work. Yet it is lightweight, compact, and has all the sophisticated features and accessories I consider indispensable: variable speeds, behind-the-lens metering, orientable viewfinder... you name it.

"Most important, the CP-16R/A also has a high-quality single system sound capability that is integral to its original design—not a modification, or an afterthought.

"When I add it all up: CP-16R/A is the only game in town!"

## **Modern production techniques require high-quality single and double system sound.**

Says Wilson: "Single system capability is essential these days for most documentary, industrial and PR films, as well as TV commercials. Because modern production techniques frequently call for the editing to be done on videotape, and single system sound

**(Above)** Anton Wilson at the Panama Canal. "Filming an in-depth feature story about the upcoming canal treaty and its implications, we were able to move fast and reliably with the CP-16R/A, covering what would normally take two months in just ten days!"

"The camera functioned flawlessly, even in the torrential rain that overtook us when we followed General Torrijos into the Panamanian jungles.

"This documentary was so successful it aired both as a two-part series on *Good Morning, America* and as a five-part series on the ABC Evening News."

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"That's why my CP-16R/A is frequently used much like a remote video camera... but with far greater flexibility and superior results. Production costs in the field are cut dramatically, and we are far less conspicuous and obtrusive than any EFP crew would be."

"Occasionally, we want the quality of double system sound as well as single system sound backup and editing ease. So we shoot both ways simultaneously, running an additional feed from the mixer into the CP-16R/A built-in amplifier, and recording single system sound on striped film. Incidentally, on a recent documentary shot this way, the single system sound quality was so outstanding that we never even used the sound from the Nagra tape!"



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# A UNIQUE NEW EXPOSURE METER THAT WAS CUSTOM-DESIGNED FOR THE CINEMATOGRAPHER

By HERB A. LIGHTMAN

The other day I received a call from Jim Branch, President of Photo Research, who wanted to talk to me about a new exposure meter his company has just developed specifically for use by cinematographers. Since Jim himself is an A.S.C. Associate Member, and his company has received five Scientific or Technical Awards from the Academy of Motion Picture Arts and Sciences, I was interested in learning more.

Jim explained that the new instrument, called the Spectra® Cine Special™, was literally tailor-made to solve problems faced by working cinematographers, and that it included every important feature they had requested in letters to Photo Research.

We set up an interview so we could discuss in detail this new exposure meter that will be available to the industry by the time this issue of *American Cinematographer* is published. Here are some of the highlights of that interview:

**Q: I know that Spectra Exposure meters have been used by cinematographers all over the world for many years. Why are you now bringing out a new model which you say is specifically designed for cinematographers?**

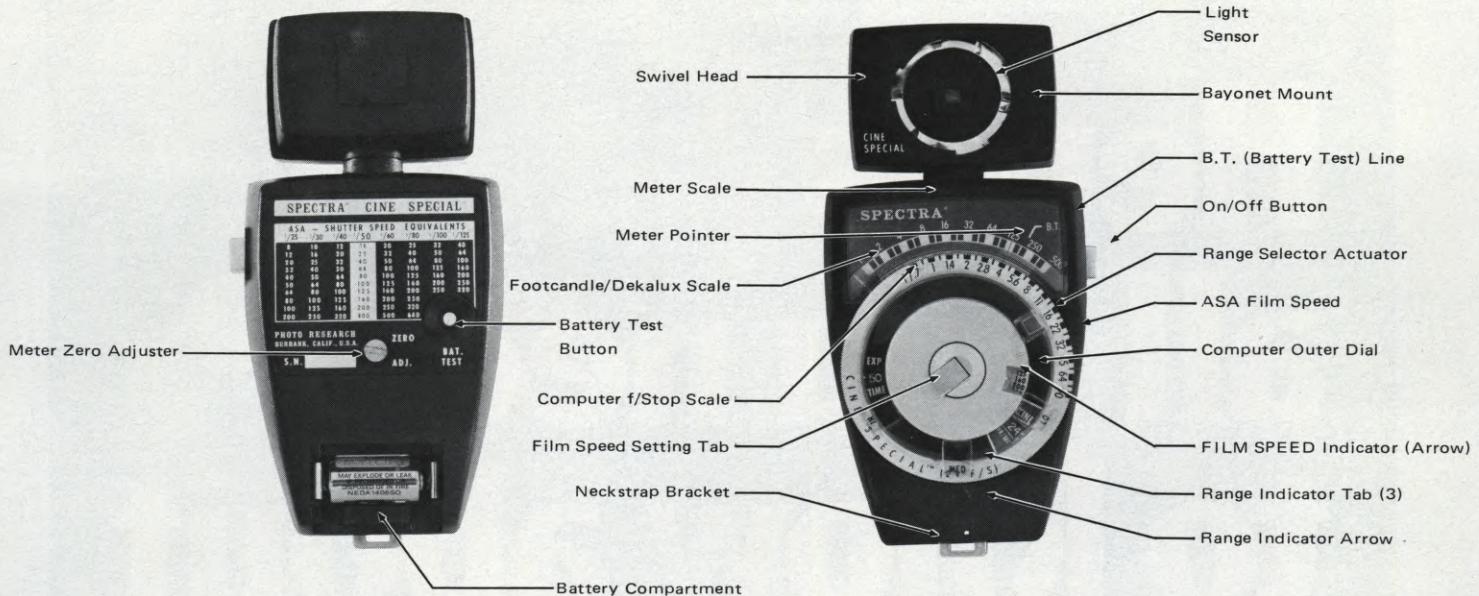
**A: For the simple reason that they asked for it. When we introduced the Spectra® Professional™ II and Combi™ II exposure meters we offered significant technological advances. They eliminated the need for the metal slides that up to that time had been required to make older exposure meters direct-reading in terms of f-stops. We also made the meter more sensitive so it could be used in dim available-lighting situations. And we made the meter more rugged, particularly the hemispherical diffuser, which we call the Photosphere™. And the Professional II and the Combi II were very well accepted by professional cinematographers. As a matter of fact, Vilmos Zsigmond has told us that he used the Spectra meters when filming "CLOSE ENCOUNTERS OF THE THIRD KIND".**

**Q: Well, what was it that prompted you to extend the Series II Exposure Meter line to provide a special meter for cinematographers?**

On the basis of feedback from many professional cinematographers describing hoped-for features in their "dream" meter, the new Spectra Cine Special has been designed precisely to their needs



THE NEW SPECTRA CINE SPECIAL EXPOSURE METER



Rear and front views of the new Spectra Cine Special Exposure Meter, developed by Photo Research specifically to suit the special requirements of the cinematographer. Pre-programmed for a shutter speed of 24 FPS, it is locked at that standard frame rate, but an ASA-shutter speed equivalent table on the back of the meter allows for quick conversion of exposure reading when other frame rates are used. The meter provides direct readout of photographic exposure by the incident-light method and reflected-light method. It also measures illuminance level in footcandles or dekalux.

**Q:** Quite frankly, we received numerous requests from professional cinematographers that we provide a direct-reading f-stop meter that was pre-programmed for a shutter speed of 24 FPS (1/50 sec.). So the Cine Special is locked at 24 FPS, the common shutter speed used by professionals.

**Q:** Is that the only difference between the Cine Special and the Series II Professional and Combi meters?

**A:** Oh, no. It's a very important difference, of course. But we also added a few others. Cameramen are accustomed to the traditional block scale calibrated in 1/3 stops. We added that. And the block foot-candle scale was not on Series II. It is on the new Cine Special.

**Q:** If the computer is locked at 24 FPS, can you directly read f-stops for different shutter speeds?

**A:** Certainly. You simply refer to the tabular data on the reverse side of the meter. You can change the 24 FPS program to other selected shutter speeds and still read an f-stop direct. All you do is select a different ASA rating to compensate for the new program.

**Q:** Can you take reflected light readings with the Cine Special?

**A:** Yes, you can take reflected light readings too. Just remove the hemisphere and then swivel the photocell assembly in the opposite direction.

**Q:** How about narrow-angle reflected light readings like a 1° spotmeter? Can the Cine Special do that?

**A:** Yes, there is a spotmeter attachment which limits the angle to a 1° measuring field.

**Q:** Do you have other accessories available for the technical photographer?

**A:** Yes, we do. We have a fiber-optics attachment, a ground glass or single lens reflex reader, an on-easel attachment, and a microscope attachment.

**Q:** What kind of a photo detector does the Cine Special use?

**A:** A blue silicon photocell detector, which is used in the Series II meters. It has proven itself to be extremely sensitive, linear, dependable, and free from hysteresis and fatigue.

**Q:** The instrument has to be battery operated. Do you have a battery test check point to check the battery?

**A:** Yes. You simultaneously press the battery test button and the meter lock device and read the condition of the battery.

**Q:** Is there any special provision for warranty on the Cine Special?

**A:** We provide a 3-year limited warranty.

**Q:** OK, we've established that the Cine

Special is an addition to your line of Spectra® instruments. Is it as rugged and durable as Spectra instruments have proven to be over the years?

**A:** No question about it. In fact, it has been put through more rugged environmental testing than any other meter made by Spectra. The meter mechanism will actually withstand more abuse than the original mechanisms. We use a spring-loaded jewel assembly which withstands an exceptional amount of shock and vibration.

**Q:** Let's say I already own a Series II meter. Can it be modified or updated to take advantage of the new features of the Cine Special?

**A:** Yes, the front cover assembly with the exposure calculator locked in at 24 FPS (1/50 sec.) can be installed on both the Combi II and the Professional II at only a nominal cost.

**Q:** You mentioned an improvement on the light collector hemisphere, which you call the Photosphere. Is it more rugged than your original hemisphere?

**A:** Much more rugged. It is many times thicker than the original, and you can actually drop the meter on the photosphere with no damage at all to the photosphere.

**Q:** I notice that the hemisphere on the Continued on Page 894

# Here's all you need to know about quality processing.

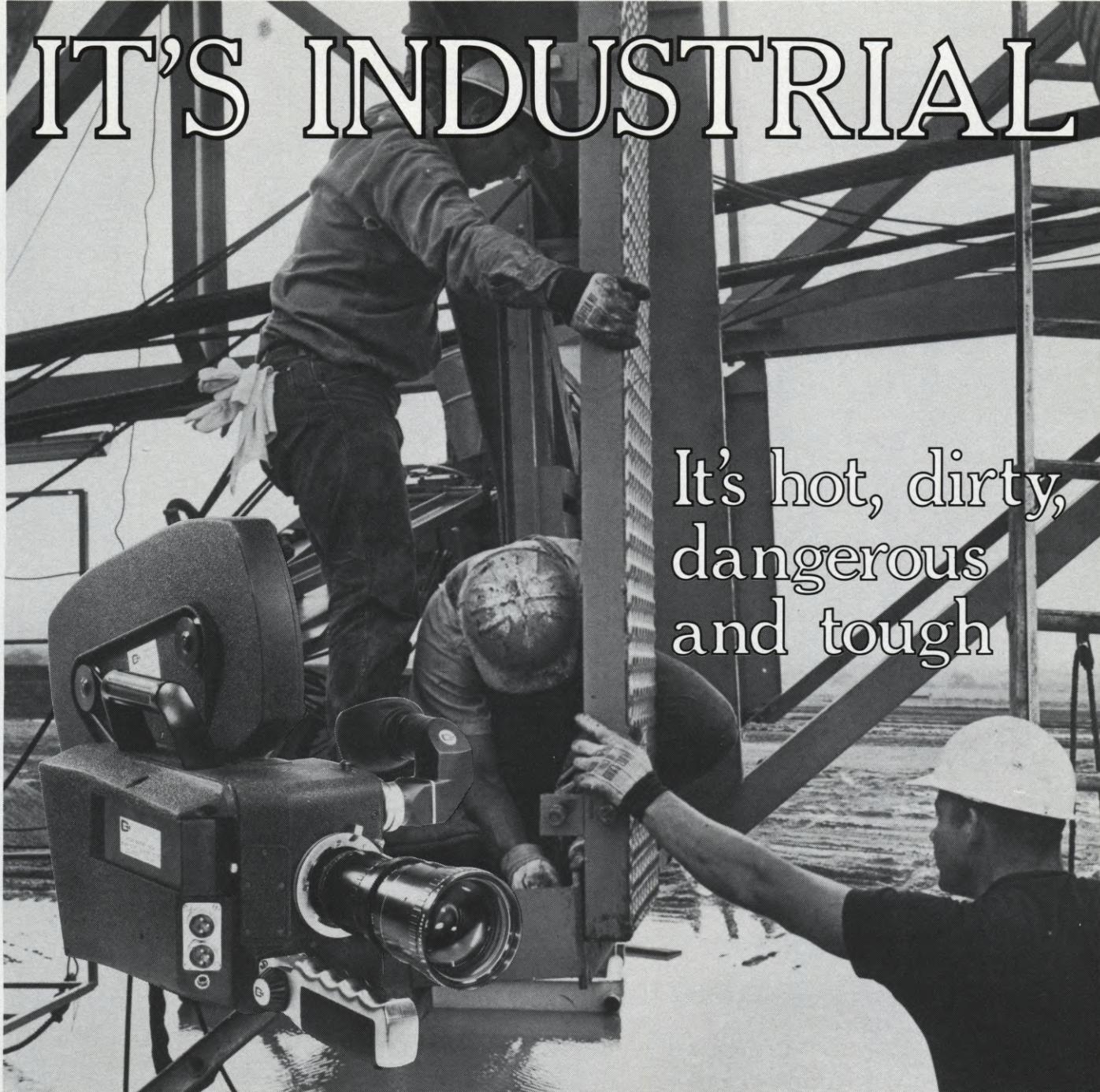


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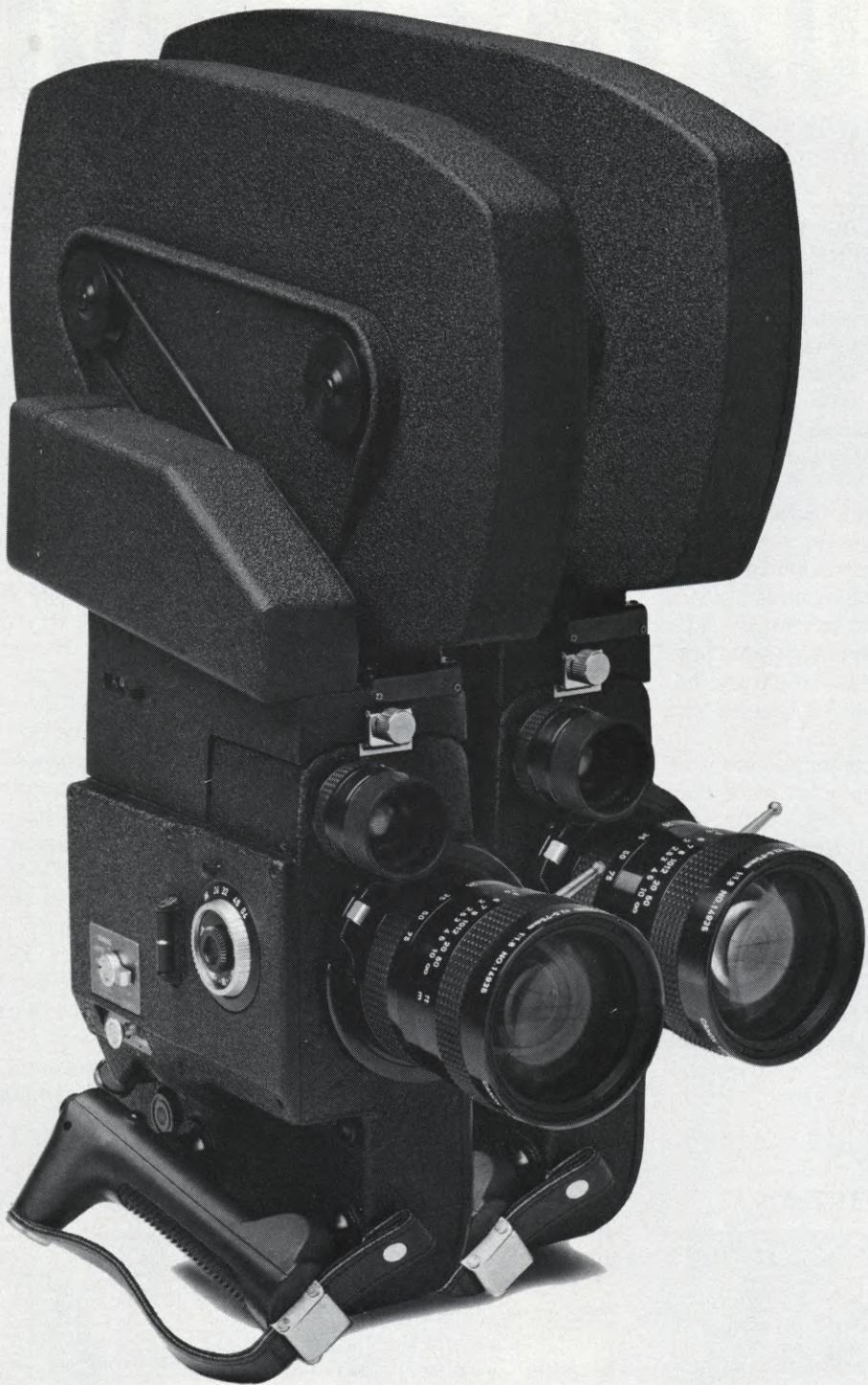


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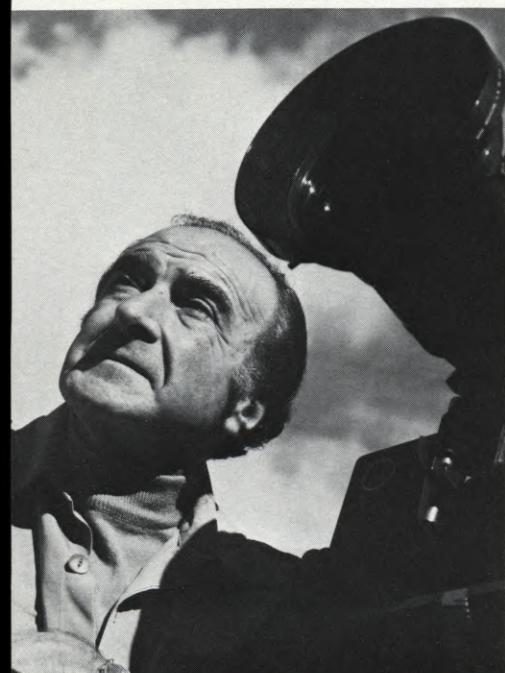
## THE AMERICAN SOCIETY OF CINEMATOGRAPHERS HONORS TWO OF ITS MEMBERS WITH A SPECIAL TRIBUTE

At a recent dinner meeting held in their Hollywood clubhouse, members of the American Society of Cinematographers honored two of their illustrious colleagues, Lee Garmes, ASC, and Stanley Cortez, ASC, with a special tribute.

A legendary figure in Hollywood, Mr. Garmes' 60-year career behind the camera stretches back to the very early days of the motion picture industry, since he came to the film capital in 1915, immediately after having graduated from Denver High School. His first job was that of painter's assistant at the Thomas Ince Studios.

During his fabled career he served as Director of Photography on more than 150 films, including "SCARFACE", "DISRAELI", "THE SECRET LIFE OF WALTER MITTY", "THE JUNGLE BOOK", "LILIES OF THE FIELD", "MOROCCO", "SINCE YOU WENT AWAY", "LOVE LETTERS", "SPECTER OF THE ROSE", "THE SCOUNDREL", "THE BIG FISHERMAN", "DUEL IN THE SUN" AND "THE SHANGHAI EXPRESS", for which he won the Academy Award.

STANLEY CORTEZ, ASC



He also functioned as Director of Photography for ten weeks on "GONE WITH THE WIND", although he did not receive screen credit (due to "artistic differences" with the producer, David O. Selznick).

Always an innovator, Mr. Garmes claims many technological "firsts"—among them the introduction of incandescent lighting to the industry, which cut illumination costs by 75 percent. He produced and directed the first 3-D movie, "HANNAH LEE" and photographed the first 70mm feature, "THE BIG FISHERMAN". In 1971, at the age of 74, he photographed one of the first videotape features (later transferred to 35mm film) and has been an enthusiastic booster for videotape ever since.

Far from living in the past, Mr. Garmes is a great admirer of such young directors as George Lucas and Steven Spielberg. "I love many of the new films," says he. "I saw 'STAR WARS' three times and 'CLOSE ENCOUNTERS' four times."

The much-honored Mr. Garmes was recently accorded a "Tribute to Lee Garmes, ASC" by the Tucson Museum of Art and the University of Arizona, and the mayor of Tucson proclaimed May 25th, 1978 as "Lee Garmes Day". A few weeks later he was honored on an even larger scale by the Directors Guild of America, in association with the Los Angeles County Museum of Art. Many of the most prominent stars, directors and producers in Hollywood turned out to salute him on that occasion.

Still very active, especially in giving generously of his time and advice to young filmmakers, Mr. Garmes says, "I'll never really retire. I love movies too much."

Stanley Cortez, ASC, was originally a student of design and began his photographic career working with many of the world's great photographers in New York and Paris. He started working in motion pictures with Edward Snyder at Pathe and then went to Paramount in New York.

The brother of film idol Ricardo Cortez, he operated for many outstanding cinematographers, including Oliver Marsh, Tony Gaudio, Clyde DeVinna, John Seitz, Arthur Edeson, Sol Polito, Ernest Haller, James Wong Howe, Charles Rosher, Karl Struss, Arthur Miller, George Barnes, William Daniels, Lee Garmes and Hal Mohr. When he was

elevated to Director of Photography himself, he was the youngest in the world.

During World War II, as a buck private in the U.S. Army Signal Corps, Army Pictorial Service, he photographed the Yalta Conference, the Quebec Conference and assignments with Roosevelt, Truman, Generals Marshall, Eisenhower, McNair and Stilwell, and Secretary of War Stimson.

Also much-honored, he received an award from the Centre National de la Cinematographie Francais de Paris for his photography of "THE MAN ON THE EIFFEL TOWER", filmed entirely in France. He received a Czechoslovakian award for "THE BRIDGE AT REMAGEN", started in Prague and finished in Germany and Rome, following the Russian invasion of Czechoslovakia.

He received the Film Critics of America Award for his photography of the Orson Welles classic, "THE MAGNIFICENT AMBERSONS".

He is an Honorary Member of Delta Kappa Alpha, the Cinema Society of the University of Southern California; a contributor to the Encyclopedia Britannica; a past member of the Board of Governors of the Academy of Arts and Sciences and is presently Vice President *Continued on Page 923*

LEE GARMES, ASC



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*"We have such power to affect attitudes and opinions..."*

*Howard W. Koch, President of the Academy of Motion Picture Arts and Sciences, shares some thoughts about responsibility and the pursuit of excellence in filmmaking.*

"Of course, the Oscar is the symbol of the Academy. But we do many other things, too. It would take hours to discuss all of them. For example, we have many student programs. We have print and film libraries. We have files on 40,000 films. These facilities are heavily used by both the press and by filmmakers. In a way, I think of the Academy as the heart of the industry.

"I think it is incredible that the integrity of the Oscar has been intact for 50 years. The Oscar gives people in the industry a goal. It stimulates them to strive for excellence.

"It's important that good work be recognized and rewarded. We're facing more competition today. It

comes from every place. There are touring stage shows playing to large audiences in even the smallest cities. It now takes better than ordinary pictures to attract people to theaters. And with production costs so high, the producers need a fairly substantial return to justify the risk.

"As a producer this means to me that we have to demand the best of everything: the best stories, the best directors, casts, directors of photography, and editors. We need the best film stock. The best marketing. You can create a great movie; but if you don't get people to go see it, you've got nothing.

"We even have to demand the best projection standards—because we have to do a good job of presenting our work. When people pay \$4.00 to see a movie, they deserve to see a good print, properly projected. You know, we spend hours and hours at a studio setting a scene and getting the color and lighting right, and then someone might show it with a projector that's out of focus. We have to remember that we're all in this together. When one of us doesn't do his job, everyone suffers.

"I'd have to admit to young people that there are no guaranteed paths to success in the motion picture business. There is still a strong element of luck in just getting a job. There are probably a lot of young people with great talent who will never get an opportunity to prove it. The main thing is to persevere. Keep trying. Don't get discouraged. I started out carrying film cans, just to be near the action, to be ready to jump if I saw an opportunity. I kept hoping and dreaming, and one day the dream came true."

*Kodak Professional Forum, our newest filmmaking publication, offers additional insight into current activities, trends and people involved in motion picture production. If you wish to be added to our Forum mailing list, write us: Eastman Kodak Company, Dept. 640, 343 State Street, Rochester, N.Y. 14650.*



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*John G. Avildsen,  
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# "IS THERE A DOCTOR IN THE OPTICAL HOUSE?"

By CHRISTOPHER BRUNEL, A.R.P.S.  
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Many years ago, when I was a little boy, my father taught me how to hand-crank a DeBrie camera with one hand and produce a fade with the other hand. Being a wonderful father, he never showed me the results! Even with motorisation you don't do that sort of thing these days because, apart from variations of depth of focus in the fade, you need the flexibility of being able to put the fade exactly where you want it.

Perhaps the most frequent modern equivalent of the kind of work that is easier not to do in the camera—nor on the set—is images on television screens or television monitors. You can shoot screens on monitors in scene with back projection or similar processes, but very often the director and the editor need the

"Optical doctor" Christopher Brunel makes a shrewd diagnosis.



If you have a "sick" scene, all is not necessarily lost. A dose of optical printer surgery may be all that is needed to cure the ailment

flexibility of being able to alter the image that is on the television screen. So one does it optically, matting in an image on the television set.

In this work there are a few things to bear in mind. First of all, the scene that contains the television screen must be rock steady; secondly, the front of the television screen should be painted matte white. The reason for this is that you have to prepare a drawn matte of that television screen and, by projecting down a frame of the film onto the animator board, it is far easier to do if you have a nice white matte front on the screen. Thirdly, if the television screen is very small in frame, the image put on it will have to be considerably reduced, so it is often best to have a 16mm interpositive done of that image rather than 35mm. Fourthly, if possible there should be no camera movement in the scene or else the matte will have to be drawn and animated to follow the movement and the image that appears on the television screen will also have to follow. Finally, if possible, nothing should pass across the face of the television screen, while the action is on; if it does—and there is one producer who invariably does it despite our warnings—it's a bit expensive, because you have to draw a separate matte and animate that frame-by-frame.

In regard to rescue opticals in general, here is an elementary catalogue of a few of them.

**Scratches:** If they are on the cell side of the negative or if they are slight ones on the emulsion side, you can make a CRI dupe negative using the wet gate process. This eliminates all but the worst scratches. If you have got a scratch near the edge of the frame you may be able to enlarge the whole frame so that the scratch goes off the edge altogether.

**Enlarging generally:** Even with the best camera crews you may get a hair in the gate or something like an assistant director on the edge of screen. Now, I remember an occasion like this when it wasn't the poor assistant director's fault, possibly the viewfinder wasn't properly aligned. At any rate, one had to enlarge the scene so that the assistant director was enlarged out. Now, of course, a side effect of such enlargements is that the composition of the scene may be affected.

Often there are some side effects or things to be cautious about in this kind of

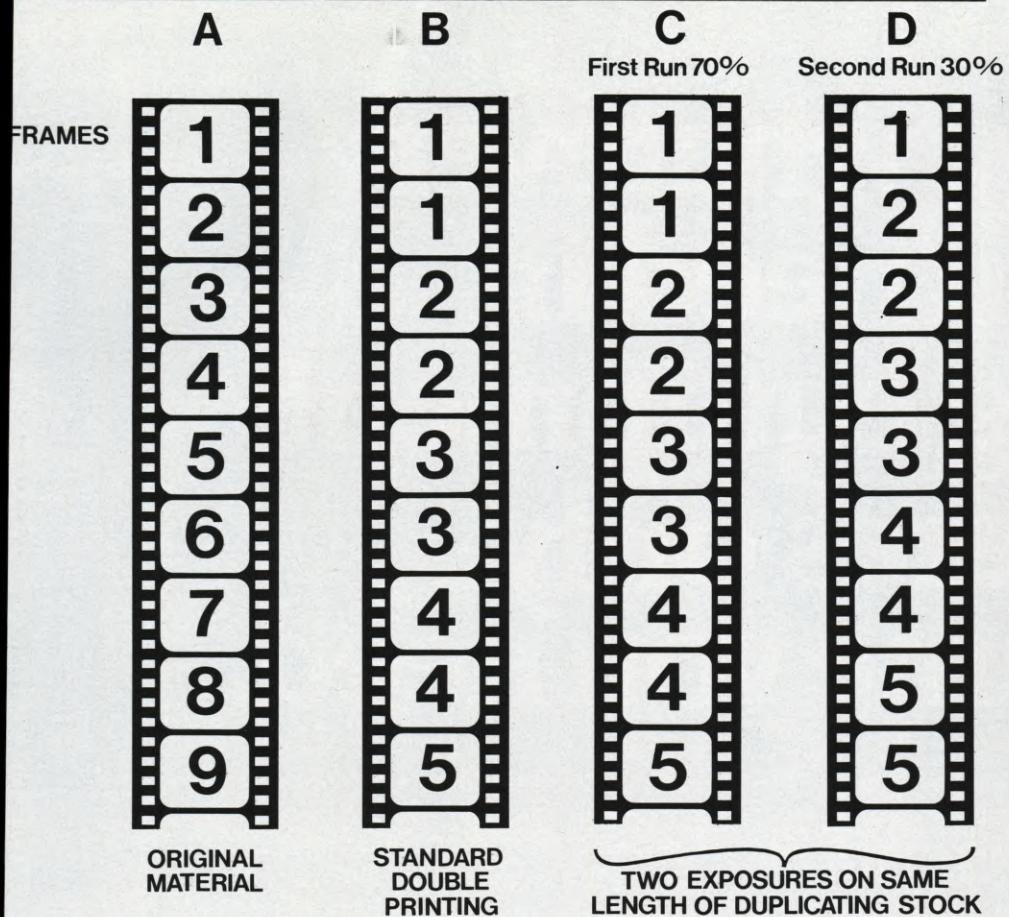
rescue operation. This is well illustrated by the case of when one wants to *lengthen a scene*. One way of doing it is to freeze a frame. You can do this if there is no obvious movement in the scene, though you can get away with freezing a frame if the lengthening of the scene takes place in part of a dissolve. The side effect of this kind of lengthening of course is that you see the grain of the frozen frame. Another way can be forward and backward printing. You can do this, if whatever movement you have got in the scene won't look strange going backwards. In exteriors the thing you must beware of, obviously, is birds or clouds in the sky or else they will go forward one minute—backward another.

Another way of achieving lengthening is to dissolve from the end of scene back to an earlier part of it, thereby lengthening almost as much as you want. And a final way I should like to present of doing this is double printing each frame, or triple printing, or quadruple printing each frame. It does slow down the movement, and a side effect of this may be jerkiness in the frame, but one can minimise this in the way illustrated in the diagram. A represents the normal run of frames, frames 1, 2, 3, 4 to 8; B is standard printing. Now, in order to make movements flow better you can do two runs over the same piece of dupe negative; first of all running the frames C at say 70% exposure and over the same piece at 30% exposure run frames D. Obviously by trial and error you've got to determine whether it is 70/30% or whatever. Now you can use this same sort of technique in skip-frame printing to *shorten scenes*.

People talk about *reversing scenes*; two things can be meant by this, and invariably one has to ask which. First of all, do people mean that the action should run backwards tail to head? This is very simply done on the optical printer by running the original material in the printer head in reverse, while running the raw duplicating stock forward in the camera head.

Or do they mean that it should be reversed mirror fashion, reversing the image left to right? This is usually referred to as *flopping* an image because the interpositive or negative being used to print from is physically flopping in the gate. Then you must shift the image to the right to rectify the sound track area.

Another thing that one may have to do



The jerkiness that accompanies double printing to slow down movement may be minimized by the method illustrated in this diagram. A represents the normal run of frames 1 through 9. B is standard double-frame printing. To make movements flow more smoothly, two runs can be made over the same piece of dupe negative. The first run (C) is made with 70% exposure. Then a second run (D) is made at 30% with frames staggered. The same technique can be used in skip-frame printing to shorten a scene.

is to *tilt* the image to straighten a scene or indeed to make it appear to be shot at an angle. Now, if you just tilt a scene, you can well imagine that the sides—the top and the bottom—of the frame come in, so in order to avoid that you may have to do a certain amount of enlarging, depending on the degree of tilt that you have to give to the scene.

*Colour and density changes* are required particularly in such things as having to do day-for-night, or very often twilight shots which are difficult when shot on exterior, because the kind of lovely warm orange glow that you get at twilight is very fleeting and you may not get as many set-ups in the camera as you want. So you have to do a bit of matching optically in order to get them all looking alike.

Perhaps not a typical example of colour changes was one we came across a few years ago, on a trailer for one of the Hammer Horror films. This was because the British Board of Film Censor doesn't like any blood to be shown in 'U' certificate trailers. But the producers of the film and the producers of the trailer wanted a particular scene that did have blood in it. So what we did was to flood the whole scene with red and you

couldn't see which was blood and which wasn't. It worked. The Censor approved it.

And finally, in this very brief résumé and listing of work of this character, one comes to the question of *optical matte* work. Basically, this is done to take out part of an image and to replace it with something else. Or it may be done, put it another way, to isolate part of a scene and give special treatment to that part of the scene, such as putting a bit of colour flood on it, darkening, lightening it, putting some diffusion screens on it. One uses the same basic technique that I explained in regard to television screens; you draw a matte on the animator and use the photographed matte in the optical printer to hold back part of the scene. Each job has its own characteristics, which will determine whether to have a hard or soft edge to the matte (and, if soft, how soft).

The optical house doctor can patch up a job with invisible bandages and can often completely cure the ill, leaving hardly a scar, even to the Producer's budget, besides they are far cheaper than retakes, and in all the optical houses I know consultations are free. ■

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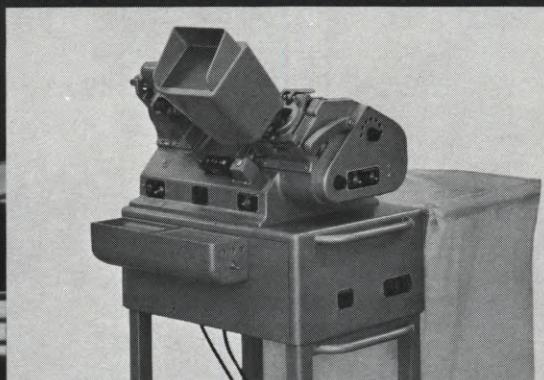
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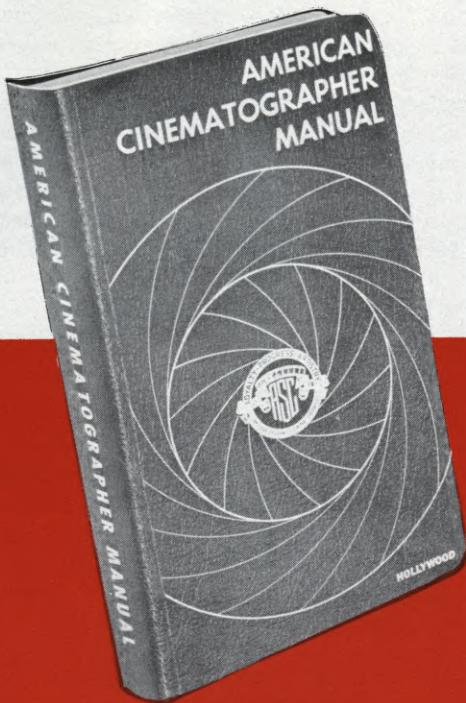


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**AN A.F.I. SEMINAR WITH  
GORDON WILLIS, ASC**  
Continued from Page 873

mean—they feel that they must time the movie, whereas I've already timed it from the start. But matrices are very complicated. They're too expensive to use anymore. They may be used in a couple of foreign countries, but no more in the United States.

**QUESTION:** Then that's why Technicolor Plant Four closed?

WILLIS: Yes. They kept it open for us. There was a lot of hysteria, because they'd already had so many advances of money, and where was the movie? They said, "We've got to get this out; we're closing down the plant." And I won't tell you what I said, because you can't print it. But I got Francis on the phone, and we kept the plant open, and got more of the materials needed for printing out of Eastman and finished off the initial run—which in itself was an accomplishment. That's the reason I can't look at it anymore. There are a lot of things in it that aren't right, but rather than be reminded of it, I have to close it out of my mind.

**QUESTION:** How many prints were made?

WILLIS: Well, I went home and got drunk after I heard that they were ready to punch out a thousand prints of a half-timed movie. That's when I started screaming and yelling and all that, but it

all calmed down. The next crisis came during the exhibition. I'm sure you've all heard that when they put movies in the theaters, they'll just arbitrarily drop out a reel in the middle of the show, so that they can sell more popcorn or get an extra showing in. Evidently they'd been dropping a double reel out of this show here and there. The movie's complicated enough without dropping 20 minutes out of it.

**QUESTION:** If you were to reshoot "THE GODFATHER: PART II" would you go for those low lighting levels again—to the same degree, I mean?

WILLIS: Probably. There's a philosophy to it—a kind of Greek tragedy thing. I surrounded Pacino with all that because of what the character was and the environment was. I made it even darker than the first movie for that reason. In my opinion, it worked. The only time it doesn't work is when you run it in a theater with below-standard projection. In order to be at a standard for viewing film, a theater screen and projector must produce 16 foot-lamberts. I mean, that's it. And if it's not, you're not going to see what you're supposed to see.

**QUESTION:** You said that you shot most of the footage a half-stop underexposed. Do you get any problems from having such a thin negative—you know, like negative scratching?

WILLIS: Well, I've heard all the stories. I get them from laboratories and producers and all that. But I don't really

Willis mulls a set-up with Coppola on "GODFATHER" location. Because of many external problems, they did not have sufficient time to establish full rapport on that project, but things went much more smoothly on "THE GODFATHER: PART II". "By then," says Willis, "we liked each other better and we had a lot of fun."



have any problem. There's a translucent quality to exposing at that level—which I kind of like. There's a great deal of latitude in the Eastman color negative. A lot—an incredible amount. But you have to know where it is you're going to put it.

**SCHWARTZ:** In regard to your question about scratches on a thin negative, I'd like to say that you underexpose day-for-night two stops and you don't have a scratch problem, so that's not a consideration.

WILLIS: Your biggest problem in anything you do—and I don't mean this to be a negative remark—is keeping control at the laboratory level.

**QUESTION:** Do you underexpose just to keep from getting detail in the shadows and then print up for the release print? Because I would think it would make your flesh tones go too dark.

WILLIS: No. As I said, I pick a printing light for the movie and I work to that light. I don't print up or down. The dailies looked about like what you saw in this release print. What I mean is that if you A and B'd the dailies with this print, you'd see that they were just about the same.

**QUESTION:** This is meant as a compliment, but was there any effects photography in the picture—front projection, rear projection, blue screen?

WILLIS: There was a quick shot of De Niro on a train in which we used rear projection.

**QUESTION:** In those flashback sequences to an early period on a New York street, was that a painting in the background?

WILLIS: No. That was the real thing—three blocks of an awful place in New York, the Lower East Side. But it's the only place left that looks like that. It was pretty dreadful.

**QUESTION:** About your lighting of certain closeups—there were several times when the lighting was so low key that the actor was just silhouetted. You couldn't see his face to see distinctly what he was feeling or anything. I was wondering what you felt about that.

WILLIS: I'll answer that in a general way, because I'm not a great believer that you have to see an actor all the time on the

screen. I believe that the scene has to be played properly, but sometimes it's better not to see what is going on until a given point in the scene. Then you see something.

**QUESTION:** Were these things discussed with the director—such as when you wanted to see a face or when you didn't want to? Did you arrive at an understanding about that somewhere along the line?

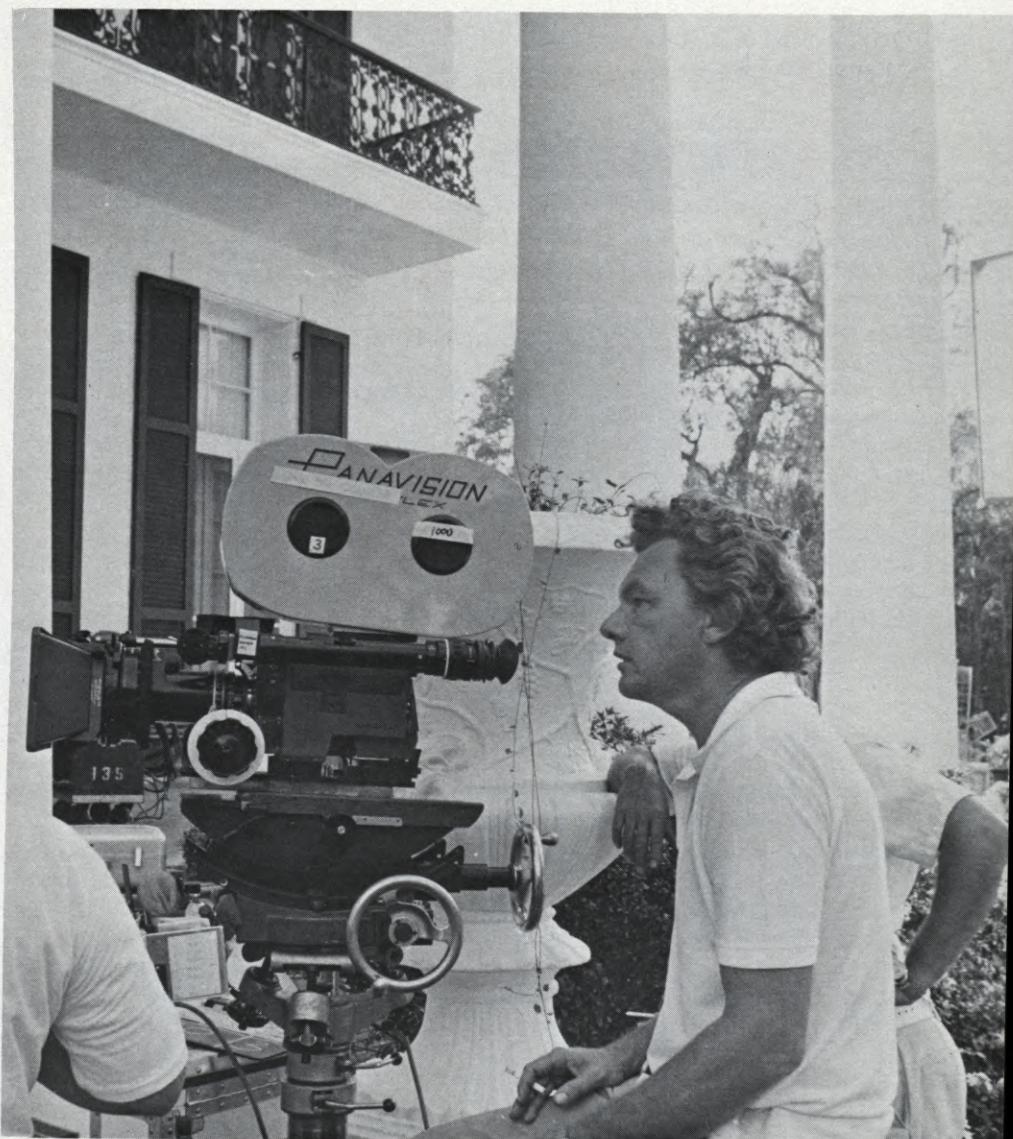
**WILLIS:** Well, I'd worked with Francis on "THE GODFATHER: PART I"—which was a hair-raising experience—and we had done a lot of fighting on that one. But on "PART II" we didn't. We had a good relationship and we had a lot of fun. What happens is that you get to know about each other and you tend not to discuss as much as you would, say, with a director who is new to you. Such a director is having a nervous breakdown until the first week of dailies, and you're worrying about whether he likes this or that. But when you work with a director for the second time, it minimizes the discussion. He knows what he's buying. In my case, he knows that if I'm going to shoot his movie, he can almost predict how certain things are going to look.

**QUESTION:** How much did you guys talk about concept on "GODFATHER ONE"?

**WILLIS:** On the first one we were too busy fighting with Paramount to discuss anything. It was like staying on your feet 24 hours a day. But conceptual discussions were long on "PART II" and very interesting. I'm very proud of the movie. It may fail on certain levels, but it's an extraordinary piece of filmmaking, if you look at it carefully.

**QUESTION:** I'd like to ask about the festa sequence—that parade through the streets of New York. Was that a real festa or was it done for the movie—and did you have to light the whole street?

**WILLIS:** The festa was staged specially for the movie. As for "lighting" the street, I'm a bit tongue-tied about that because it was such a nightmare. It's things like that which sometimes make me want to become a still photographer—because you don't have to cut anything together. A still photographer doesn't have to match light from scene to scene. We started the festa sequence in overcast—and I might say here that I think the only thing that Francis and I didn't really agree on was the use of soft-light. He



On each new project he undertakes, Willis seeks first to understand the "philosophy" of the story and the manner in which the director wants to handle it. Only then can he comfortably establish the aesthetics that will determine the picture's visual style. He perceived the philosophy of the "GODFATHER" films as bordering on Greek tragedy and gave them a suitable somber lighting style.

didn't like it, but I like it for period work because I think it tends to look more like period lighting. Anyway, trying to shoot that entire festa sequence in overcast turned out to be a horrendous experience. It took weeks, because we kept cutting it up from day to day. The sun would come out and we wouldn't be able to shoot. I had tarps strung for two blocks (because it was an east-west street, which was swell), but there were windows built all the way along one side, above the period work which had been done. When the sun would hit them, the reflections would come down and hit the street.

**QUESTION:** The sequence looked very moody. Did you use any smoke or fog filters?

**WILLIS:** I used a low contrast filter for all of the period work, which is touchy, because I feel it's like relying on fog filters.

A lot of people's answer to period work is: "Well, I'll drop in a fog filter." But that's bull, because it doesn't do anything. It's basically the photography that has to carry it. Just dropping something in front of the lens won't do it. As for smoke, there was one point in the sequence where the fireworks were throwing a lot of smoke around.

**QUESTION:** Apart from low contrast and 85 filters, did you use any other diffusion or color filters?

**WILLIS:** Nothing—except for the required neutral density filters, which meant that the operator couldn't see half the time. You see, all the period work was shot at T/2.8 and it was all forced-developed, exterior and interior. I don't have to tell you how horrendous the neutral densities were that I had to drop in, because not only was I shooting at T/2.8, *Continued on Page 906*

## SPECTRA CINE SPECIAL METER

Continued from Page 877

**Q:** Cine Special is a little smaller than on the original Spectra Professional. Is there a reason for this?

**A:** It is smaller, but due to the density of the material it is a better diffuser and will integrate the light it collects more efficiently on the face of the photocell than the larger hemisphere. It is also somewhat less sensitive to side and back-lighting, which eliminates the potential for underexposure in cases of severe backlighting.

**Q:** I notice that the meter has a mirror back scale I have seen on more expensive measuring instruments. Does this feature avoid parallax?

**A:** Yes. It gives the operator the additional benefit mainly in the area of accuracy and readability.

**Q:** Are we talking about a prototype, or will the Cine Special be on the market in the near future?

**A:** The Cine Special will be on the market on approximately September 1, 1978.

**Q:** Can you supply me with complete specifications for my readers?

**A:** Oh, yes. The following specifications should give your readers all the information they need concerning the new Cine Special:

### CINE SPECIAL SPECIFICATIONS:

**MEASURING CAPABILITY**—Direct readout of photographic exposure by the incident-light method and the reflected-light method. Also measures illuminance level, in foot-candles or dekalux.

**LIGHT SENSITIVITY**—0.008 to 80,000 foot-candles or dekalux (equivalent to EV-5 to EV 18.3 at ASA 100), in three ranges:

**LO**—0.008\* to 8 foot-candles or dekalux

**MED**—0.8 to 800 foot-candles or dekalux

**HI**—80 to 80,000\* foot-candles or dekalux

**\*Note:** The exposure meter measures light values from 0.008 to 80,000 foot-candles or dekalux, although the Foot-candle/Dekalux Scale is unmarked below 0.01 and above 50,000 foot-candles.

**MEASURING RANGE**—10 million to 1 (23 f/stops) direct-reading range.

**COMPUTER SCALE RANGES**—f/stops from f/0.7 to f/90; ASA film speeds from 0.10 to 25,000; illuminance levels from 0.004 to 50,000 foot-candles or dekalux.

**ACCURACY**—Meets all specifications of ANSI Standard PH3.49-1971, "American National Standard for General Purpose Exposure Meters (Photoelectric Type)".

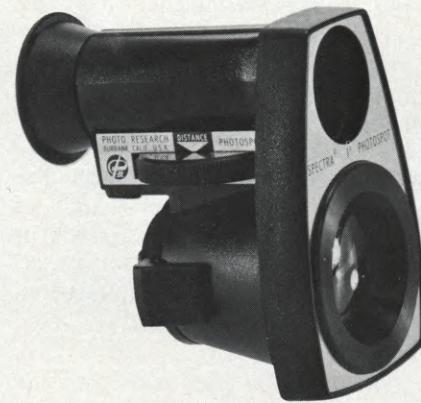
**REFLECTED-LIGHT MEASURING FIELD**—42° square with built-in Reflected-light Sensor; 1° diameter circle with accessory PhotoSpot attachment.

**LIGHT SENSOR**—selected silicon photovoltaic cell, with computer-selected glass filters to tailor spectral response.

**ELECTRONIC CIRCUITRY**—all solid-state, with extensive use of integrated circuitry; ruggedized and temperature-compensated for field use.

**POWER SOURCE**—Operates on one 6-volt silver oxide battery (Eveready 544, Mallory PX-28, or equivalent). Battery-test circuitry included in meter.

**MAXIMUM DIMENSIONS**—5½" x 2½"



SPECTRA 1° PHOTOSPOT ADAPTOR



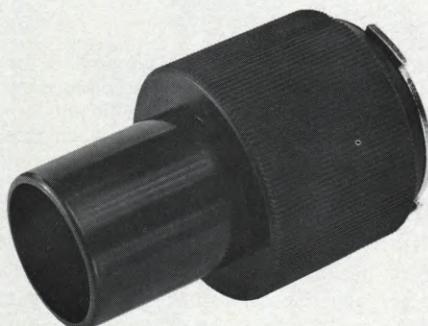
SPECTRA FLEXIPROBE

x 2" (14cm x 7cm x 5cm)

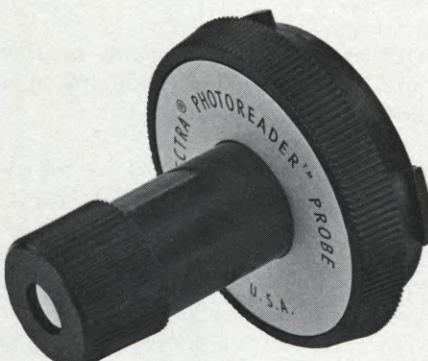
**WEIGHT**—Approximately 8 ounces (0.25 kg)

**OPERATING TEMPERATURE RANGE**—0°F to 140°F (-18°C to 60°C) with recommended silver oxide battery; 40°F to 130°F (5°C to 55°C) with mercury cells.

**STORAGE TEMPERATURE RANGE**—-40°F to 160°F (-40°C to 70°C), with battery removed. ■



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PHOTOREADER PROBE



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ASA	1/30	1/40	1/50	1/60	1/80	1/100	1/125
8	10	12	16	20	25	32	40
12	16	20	25	32	40	50	64
20	25	32	40	50	64	80	100
32	40	50	64	80	100	125	160
40	50	64	80	100	125	160	200
50	64	80	100	125	160	200	250
64	80	100	125	160	200	250	320
80	100	125	160	200	250	320	400
100	125	160	200	250	320	400	500
200	250	320	400	500	640	800	1000



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It was more the response of friends than of customers and we're very, very grateful. Thanks to your understanding and support Tiffen's back—bigger and better than ever!

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Thank you for waiting,

*The Tiffens*

Nat, Sol & Leo Tiffen

## KAYAKING ALONG THE SUSITNA Continued from Page 916

Bob Blackadar and John Pettit took a raft through PREPARATION H, sneaking the right side, without serious problems. And then the boaters and the rafters started down the rest of the canyon together.

The raft eventually flipped over, sending Pettit and Blackadar sailing through the air. At the same time an oar lock snapped, so the raft had to be helicoptered out. Hazelwood swam at Hotel Rock #1, the next rapid after PREPARATION H, and ended up on the raft, and finally flew out again. The other boaters made it all the way, through the SCREAMING LEFT TURN, DEVILS HORN, PEARLY GATES, and other unnamed monsters. They were wide-eyed when they reached camp. The rest of Devils Gorge is every bit as wild as PREPARATION H.

Wouzle tallied up the final score; kayakers two, Nozzle five. ■

(EDITOR'S NOTE: It was with deep sadness that I received word from Roger Brown that Dr. Walt Blackadar drowned while kayaking the South Fork of the Payette River in Idaho on May 19th. I had the pleasure of Walt's company for only eight days when I accompanied Roger's crew to film kayaking of the Colorado

River rapids for his production of "THE EDGE" [see AMERICAN CINEMATOGRAPHER, August 1975], but during that short period I got to know the tough, compassionate, jolly physician/super-kayaker from Salmon, Idaho extremely well. It was Walt who urged me to push off in a kayak for the first time into the raging waters of the Colorado, and it was Walt who stayed by my side, ready to help if needed, when a tremendous gust of wind blew me upside down in the water. During the magic evenings, camped out on a sandbar, I would sit with him at a campfire and drink "Surgical Screwdrivers", composed of medicinal alcohol and orange juice, and we would

talk for hours about life—and death. Said Walt, "I know how I'm going to die—like a gentleman, in bed, with cancer—and it's gonna be tough." But it wasn't to be like that. As Roger Brown wrote, "This was Walt's way. He was not about to take a back seat in kayaking, in spite of his fifty-five years . . . He died doing what he loved to do most, which isn't all bad." He died—and yet he didn't, for he will remain forever alive and young in the hearts of those of us who were privileged to know him. Walt Blackadar—doctor, boater and frontiersman—was larger-than-life, a genuine American original—and one helluva lot of man.

HERB A. LIGHTMAN)

### ABOUT THE FILM MAKER

Roger C. Brown has done the production, direction and photography on over one hundred films: shorts, documentaries, commercials, and features (16mm and 35mm). His recent efforts include a sports adventure feature film called "THE EDGE" which now is playing in theatres around the nation; a ski film for United Airlines, and an American Sportsman show for ABC Sports on kayaking Cross Mountain Gorge in Western Colorado (now in production).

He was the helicopter cameraman on "BIG WEDNESDAY", a feature film on surfing recently released by Warners, he was the Director of Photography on a British film about the New Age Congress (R. Buckminster Fuller, Ben Bentov, and several other cosmologists) which was held on Florence, Italy, in February, and he recently directed and photographed two ABC American Sportsman shows on kayaking, one which aired on June 11, and the other which will be shown early in 1978.

Since 1966, Roger Brown has received twenty-two major national and international first place awards, including Grand Prizes at the American, Sunset, and Cortina Festivals and a Clio for an Eastern Airlines commercial. Additionally, he has received sixteen Golden Eagles and numerous second and third place awards.

In 1977-78, ALASKA KAYAK, which Brown produced for ABC Sports, won a Cine Golden Eagle and then went on to win the Best of the Festival Teddy Award in the National Outdoor and Travel Film Festival. SKI MOUNTAINS OF THE WEST, his United Airlines production, took first place in the Travel-Recreation category of that same Festival.

Member: Directors Guild of America and Cameramans Local #659.



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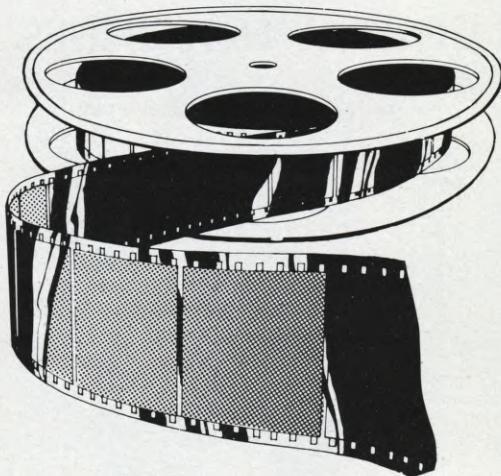
Send your name, company affiliation, address and phone number along with a check for \$90.00 (made payable to the TTFL Committee of the IES) to: Mr. Bud Wilkins, Symposium Chairman, Opryland Productions, P.O. Box 2138, Nashville, TN. 32714. Students may attend the sessions at a charge of \$10.00/day. The student fee does not include meals, banquet and other entertainment scheduled for full registrants. Registration prices at the time of the symposium will be higher, so advance registration is encouraged.

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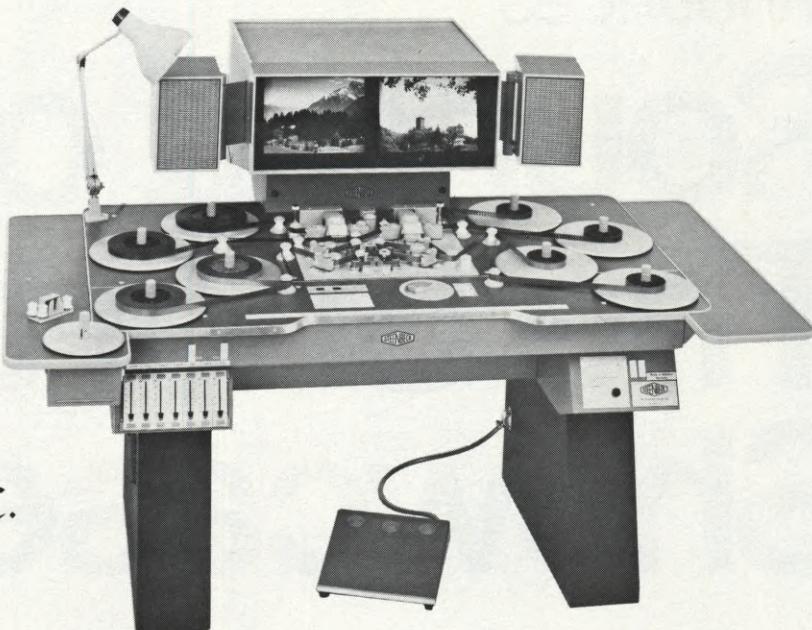
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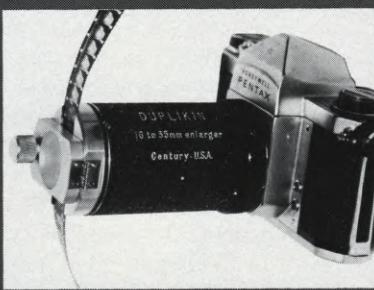
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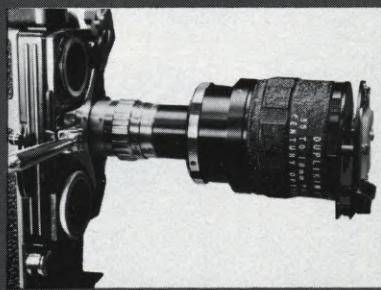


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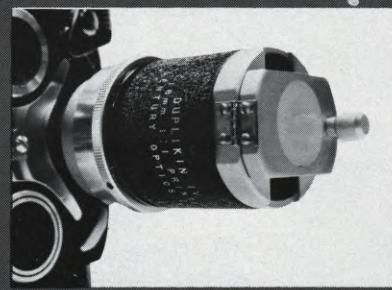
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# VIDEOTAPE AS FILM

By MICHAEL D. SHETTER  
Manager, John Deere Television

When videotape recording first became a reality, there were shouts that it would replace film. When tape editing became a reality, again the shouts were heard. And since then, with each new advance in television technology the cry is again heard. In defense of this battle cry film people have rallied and beat down the magnetic enemy.

As a film producer in the early 1970's, I questioned this constant battle. I have always felt that my main value was in taking pictures and sound, and using them to communicate a message. I look at the position of cameraman or director of photography as a person who takes a scene, lights it properly, composes it properly so that when the viewer sees that picture it produces the desired esthetic response. I feel an editor takes the concepts, pictures and sound, and molds them into a presentation that achieves my goals. NEVER have I associated any of the traditional jobs with film, stills, or videotape. The medium upon which the

**At John Deere Television, C-clamps and plywood provide the basis for the majority of bolt-ons. In addition to the camera, provision is made to secure the recorder and camera control unit. All three elements have held up very well under severe conditions, like riding this disk harrow through a fall plowed field.**

information is preserved is unimportant, how it is done is the main concern.

This brings me to videotape as film concept. In 1974 I was asked to head up Deere & Company's infant teleproduction unit. From the very beginning we shot all our material "film style". By "film style" I mean simply that no consideration was given to the media of preservation; we were solely interested in getting the best picture and the best sound, and then combining them through creative editing into a finished product that achieved our goals.

As the teleproduction capability at Deere & Company grew, we moved more and more to a total "film style" production technique. Currently we are producing product information, sales information, advertising, and training material that is done totally film style. By using videotape as film we are able to produce high quality material at a high volume and at a low cost per screen minute without the traditional television look.

Employing film technique with a video camera combines the very best of both worlds, maintains the author, because communicating is done with pictures and sound, not with chemicals or electrons

## LOCATION PRODUCTION

In order to look at this videotape-AS-film technique under the most severe conditions, let's start with location production. Our Industrial location crew normally consists of a director, cameraman, technical director, and gaffer/grip. The job responsibility parallels that of a comparable film crew. The director directs. The cameraman is responsible for the esthetic qualities of the picture and, as such, not only operates the camera, but designs the lighting and supervises dolly setups, mount shots, and all camera moves. The technical director assists the cameraman in assuring that the picture meets the best technical quality without impairing any of the creative or esthetic considerations. He also helps in setups and is responsible for the control and logging of footage, and the operation of the videotape recorder. The gaffer/grip does the same basic grip work as in a film unit, from rigging mount shots, to pushing dollies, to moving lights.

Our location equipment consists of an IVC 7000P camera, an Ampex 3000-B recorder (both totally battery powered), an O'Connor Hydro-Ped with O'Connor 50 head, a grip kit with mounting equipment, including a "Super Grip", and assorted chains, clamps, etc., a set of reflectors, a battery powered color monitor and scope that are available as needed. If lighting is needed, we can carry two Lowel-Light Kits and two Lowel-Light soft lights. On large lighting shoots we usually rent additional lights and generating equipment.

All of our normal location equipment is air-shippable. On a typical location we rent a large wagon at the airport and a crew car, and work from the two vehicles. The camera, recorder and camera control unit can easily be carried to practically any location. We have a backpack for both the recorder and the CCU so that the crew of four going into a remote location can move all the necessary equipment in one trip. Whenever possible, we also take a scope and color monitor (again both of these are battery powered). Although these two pieces of equipment aren't absolutely necessary they are very handy in most cases.

In using lights and reflectors we don't worry about the amount of light used. We first establish the desired "f" stop, then using the monitor and scope we light until

*Continued on Page 909*





(LEFT) The camera, with detachable viewfinder, recorder, camera control unit, and monitor and scope provide the basic location package. If necessary, the scope, monitor and viewfinder can be eliminated for specific shots, once the initial set-up has been accomplished. (CENTER) The O'Connor Hydro-Ped is also used for bolt-on shots. It provides a rigid platform that will move with the object. Recently a set of 1½" pipe and fixtures was adapted to provide a wider variety of bolt-on capabilities. (LEFT) The location package being mounted on a disk harrow.



(LEFT) The studio at John Deere Television is 40 x 40 feet in area and allows a great deal of flexibility in lighting and set building. (CENTER) The industrial parts counter was built in one corner of the studio and used for three shows. For interior locations available light is used whenever possible. The capability of television cameras for easily balancing to any type of light facilitates moving from interior to interior with a minimum of set-up time. When needed, three Lowel-Light kits are carried and these can be augmented with standard light units up to 2K broads. (RIGHT) On this location shoot the crew was required to tape the operation of a new industrial digging bucket. With the stable Hydro-Ped and television camera, not only was the crew able to get right into the action, but each shot could be monitored by the cameraman, director and technical director.

(LEFT) The JDTV tape duplication facility allows the making of 16 copies of each master per pass. The video and two channels of audio can be controlled for multi-lingual versions of the tapes. (Bob Bergstrom checking levels.) (RIGHT) Studio set for a series of shows for Industrial Engineers. This series called for a TODAY show type of format. (Bob Young, Cameraman.)



# FILMING ALONG THE SUSITNA: KAYAKING'S EVEREST

By ROGER C. BROWN

March 24, 1976, New York City. I was having dinner with Walt Blackadar who was there attending a medical convention. I was trying to drum up work with ABC Sports. Walt and I had worked together the year before when he paddled for a feature film I produced called "THE EDGE". It was an auspicious reunion.

"Know any exciting rivers that haven't been boated yet, Walt? Something that would make a good television show?"

"There's the Devils Gorge on the Susitna River in Alaska. The top rapids are the most fearsome I've ever seen that can be paddled. That stretch of river is

the Mount Everest of kayaking."

It was easy, sitting there, nibbling on fillet of sole, and sipping *Pouilly Fuissé*, to say let's go. The ramifications of doing a kayaking "first" only vaguely crossed my mind. The fact was that Walt didn't know if what he wanted to do was possible. If it was impossible he stood a very good chance of drowning.

Expeditions are expensive. Fortunately the ABC American Sportsman people financed our trip. In return we documented the adventure on film. Millions of people have seen and enjoyed the show now, and the advertisers are

Devils Gorge, described as "the most fearsome rapids I've ever seen that can be paddled" is the bait that lures intrepid camera crew and six daredevil kayakers to Alaska to shoot ABC American Sportsman show

happy. So are we.

Blackadar first visited the Devils Gorge with Roger Hazelwood and Kay Swanson in 1972. They put their kayaks into the Susitna over one hundred miles above the Gorge where the Denali Highway crosses the river near its headwaters. Having no raft or air support they carried all of their supplies in their kayaks. Although they had scouted Devils Gorge from a plane and knew it was rough, exact scale was difficult to determine. The size of the water only became completely clear when they looked

Continued overleaf



(LEFT) Much-honored filmmaker (and avid sportsman) Roger Brown, shown with his 13-year-old son, Gordon, as they are about to embark on their Alaskan filming adventure. Roger got turned on to kayaking himself while filming Colorado River rapids sequences for his feature "THE EDGE" and is now a skilled enthusiast. (RIGHT) Driving to headwaters of the Susitna along the Denali Highway, with kayaks piled on the roof and a load of filming equipment. (BELOW LEFT) Loading the rafts, a critical operation, since all equipment could be lost if not secured properly. (RIGHT) Camping along the Susitna.





(LEFT) A section of the spectacular Alaska Range in what is America's last remaining wilderness frontier—a stunning background for testing one's self against nature, and for filming. (RIGHT) Filming a kayaker as he braves the raging waters of the Susitna River. Boating this untried stretch presented extreme dangers, particularly since the churning opaque water, dense with silt, revealed scant clues of what obstructions which lurked beneath its surface.



(LEFT) Young Barney Griffiths arrives with his kayak trussed to the helicopter. (RIGHT) A first look at Devil's Canyon, a sight chilling enough to send any sensible man toward hearth and home. Lacking the coaching and experience of any who had gone before (because there hadn't been any), the boaters were literally taking their lives in their hands on this furious stretch of water. (BELOW LEFT) The kayakers rest in calm waters following their ordeal. (RIGHT) Waiting for the train, as the great adventure draws to its end.





The late Dr. Walt Blackadar—at the age of 55, physician, frontiersman, and kayaker extraordinaire, shown getting ready for the Alaskan challenge.

at the rapids from the water level. Blackadar and his companions saw no way through the top rapids so they did an exhausting six and one-half hour portage around it. When they tried to paddle the rest of the canyon they ran into serious trouble. Swanson had to get out of his boat, and when Hazelwood saw this he crawled out onto a cliff to be removed later by helicopter. Walt made it through, but it was a frightening trip that left vivid impressions on his mind. Those memories translate into stomach butterflies every time he talks about the Susitna.

John Spencer, a young, strong but inexperienced anchorage boater tried to run the Gorge alone in May of 1974, but he also carried his boat around the first rapids and another drop as well. When our expedition arrived in Alaska Spencer met us. "If you put five good boaters in there three might come out the other end."

Our expedition was made up of five expert kayakers: Dr. Walt Blackadar and Roger Hazelwood who were back for more, John Dondero, a boatbuilder from Ketchum, Idaho, and Billy "Wouzie" *Continued on Page 910*



The "foaming" operation. Cully Erdman reinforces his kayak with ethafoam beams in order to prevent its possible collapse in the violent waters.



(LEFT) The helicopter from which Roger Brown did the aerial filming for the show. He also had the foresight to rig it with a rope that could be lowered as a lifeline to kayakers in trouble. In at least two cases, this averted disaster. (RIGHT) Lining up multiple cameras to cover the action. (BELOW LEFT) Early Winter's Light Dimension Gortex tents being tested in campout along the river. The lightweight shelters passed with flying colors. (RIGHT) Cameraman Jim Emerson mounts GSAP camera on a kayak.





(LEFT) Walt Blackadar adjusts Whillans sit-harness (usually used in rock climbing) with a carabiner attached from the harness to the life jacket. Roger Brown insisted all kayakers wear these for the sake of safety. He carried a rope in the helicopter with a small partially filled water jug for weight. If a kayaker were stuck in a "hole", he could drop the rope and haul him out. Dr. Blackadar successfully tested the hook-up. (RIGHT) Walt, right in the thick of it as usual, rides out an angry avalanche of water.

(LEFT) Barney Griffiths, 18-year-old native of Anchorage, Alaska, yearned to join the kayakers on their great adventure into the ferocious waters of the Susitna, but was turned down because they feared he was not sufficiently experienced and might meet disaster. He forced the issue by sending word that he would go it alone if they would not take him along. The others relented and he made it through in fine style, despite a close call or two. (RIGHT) Young Barney about to be flipped over by one of the big waves he bravely tackled head-on.



(LEFT) Billy "Wouzle" Ward had the best run of the day. He charged between two giant waves perfectly, not a millimeter off his line. He took each wave straight on and glided along like a fish. He plunged through the Nozzle and into the left eddy, completing the first and only run that didn't even involve a roll. (RIGHT) Walt Blackadar with his son, Bob, in Alaska. Bob was in charge of the three Havasu rafts used for support and to haul supplies.



**AN A.F.I. SEMINAR WITH  
GORDON WILLIS, ASC  
Continued from Page 893**

but I was forcing it. That meant that there were a lot of N.D. filters that the operator had to look through.

**QUESTION:** Why did you choose to shoot at T/2.8 for daytime exteriors?

**WILLIS:** Well, lenses change qualities as you stop down, so I just chose that stop for the entire sequence, in order to maintain a consistent feeling.

**QUESTION:** I'm curious about the yellowish-reddish color cast you had in one scene. It was a period scene in an olive oil office and you were shooting from the back of the office toward the window. Did you intend for it to be that warm?

**WILLIS:** Yes, I know what you're getting at, but let me tell you what happened there. I never could straighten it out. As you know, one of the things you have to watch out for when you're shooting a movie is to maintain lighting continuity, so that the scenes within a sequence will cut together smoothly in the visual sense. There was a lamp in that room over his desk and it was prominent in the master shot, but the master shot was cut out of the movie, so you never saw the lamp. In the closer shots, I had put a color cast on De Niro's face because of

the lamp. So I made a mistake; that's what it amounted to. I should have either placed the lamp so that it was always in, or cut it out completely.

**QUESTION:** In that scene, the exterior showing in the background went a bit blue. Was that because you used no 85 filter?

**WILLIS:** No. There was an 85 on the camera. How you light an interior-exterior scene depends upon the circumstances. Sometimes you shoot tungsten inside and sometimes you light for a daylight balance, depending upon what is more convenient to work with at that moment. In this case, the lights used inside were of a lower Kelvin. That's all that made the interior warmer.

**SCHWARTZ:** I wanted to ask you what type of units you used with blues on them inside that gave you so much control over them. You must have used pretty good sized units. You didn't use soft-lights, did you?

**WILLIS:** No. When I did this movie, I'd finally refined a system which I'd been using for several years. What it involves is either daylight photo-floods, five to a diffuser—or it might be FAY lights bounced off. (I'm using that less and less now because it's so cumbersome.) So I take daylight photo-floods and fire them through a diffuser which is in the ceiling. But then I'll take quarter booster blues,

which are available from Rosco, and I'll just keep adding them. A daylight photo-flood reads 4800 Kelvin anyway, so it's red to begin with. I either add blue or subtract blue, depending upon what it's supposed to look like.

**QUESTION:** The period interior sequences in New York were very, very brown and there was no blue in the scenes at all. Did you influence the art direction in order to get that effect?

**WILLIS:** Yes. I don't like blue in movies, especially period movies. I don't even like it in contemporary movies. I think it's a vulgar color on the screen. I don't hate it. I wear it, but I mean that on the screen I don't like it. I think it overwhelms actors and overwhelms the screen.

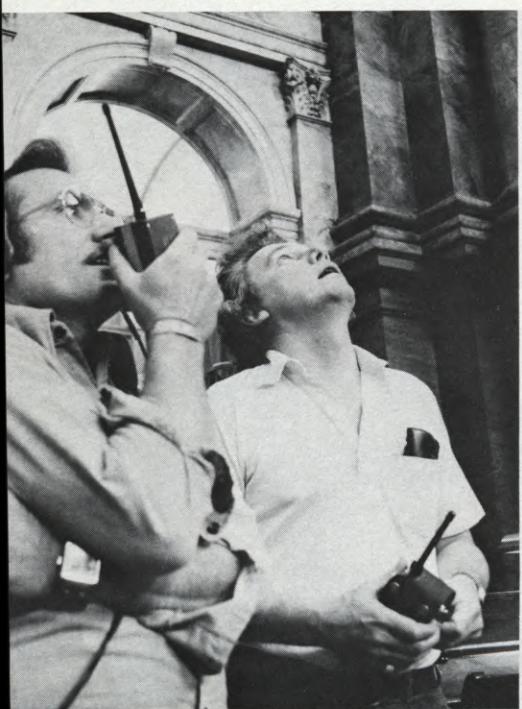
**QUESTION:** You used a lot of blue in "PARALLAX VIEW", if I'm correct.

**WILLIS:** There was a lot of blue in the light on that picture. Those were mercury vapor lamps. But that, again, was a total treatment in a room, as opposed to someone walking around in a blue jacket.

**QUESTION:** What kind of lighting units do you use outside?

**WILLIS:** Sometimes I use absolutely nothing, but on "PART II" I used probably more exterior light than I have in the past, because of the period element. I needed a lot of control in order to make it work. So I used arcs in Sicily. I used arcs at Lake Tahoe—for two reasons. First of all, it's very expensive to shoot there. Secondly, if you've ever been to Tahoe, you'll understand why the Donner Party got trapped there and all of them ate each other. The weather there is horrendous. In about 20 seconds you'll have a snowstorm, and in another 20 seconds the grass will be growing. It became a horrendous experience trying to paste exteriors together there. In a case like that, it pays to have lights that can help you out, because you can't make sunlight. The producer was always coming up to me and asking, "What are we waiting for?" I said, "I'm waiting for you to ask me what we're waiting for." He said, "Well, why can't we shoot?" I said, "Because we have 15 minutes on continuity in the sun, and now it's raining. We can't do anything else." But, in general, I used a lot of light primarily for the look.

**QUESTION:** That snow sequence at Tahoe, where Michael's inside a room talking to Fredo—was the snow an accident?



**WILLIS:** The snow was actually an accident. A couple of days before that we were photographing the party sequence outside, with the band and the whole thing, and then it snowed. So we took advantage of that particular snowfall for the scene in the sun parlor. That night the roof collapsed because there was so much snow. It's wonderful up there. I can hardly wait to go back.

**SCHWARTZ:** You told me you love snow.

**WILLIS:** I do, as long as it's not in the movies I'm working on.

**QUESTION:** For shooting that period stuff in New York, did you use old lenses—old Cooke's, old Baltars?

**WILLIS:** I used Baltars for both movies. I used the same camera and the same lenses on the second one as I did on the first one—mainly because I'm hopelessly romantic and I thought it would be a nice idea to do that.

**QUESTION:** I was curious about why you picked the interior-exterior balance that you frequently did. You would let the interior foreground go dark, but what could be seen out a window would be hotter than normal, and bluer, too. Was that concept a matter of your personal taste?

**WILLIS:** That concept applied to this movie, as far as Lake Tahoe and the boathouse were concerned. As for it being bluer, again that was because the Kelvin of the interior light was lower than the Kelvin of the exterior light.

**QUESTION:** But I'm sure you had the facility and resources to say, "Put more neutral densities on the windows." Why did you elect not to?

**WILLIS:** I always elect not to do something that is going to be more complicated than is necessary. As it was, there were \$20,000 of neutral densities that were cut for that boathouse. But whenever anybody elects to look out windows in a movie, the price goes up. I mean on location. I use about a three-stop balance between interior and exterior, because at three stops you can still see people. Now, if you want to see more detail, then you've got to start throwing stuff on the windows and bringing up the interior light level and all that kind of thing.

**QUESTION:** So your choice was based upon time and money, rather



Willis checks a possible camera angle through his finder on the set of "ANNIE HALL", voted "Best Picture of the Year" by the Academy of Motion Picture Arts and Sciences. A more recent collaboration with Academy Award-winning director Woody Allen (standing behind him) is the Bergmanesque "INTERIORS", currently in release.

than on what you wanted the result to be?

**WILLIS:** No. It was a combination of both. Had it been time and money, I wouldn't have gotten \$20,000 worth of neutral densities to put all over the windows. There's much more of the action that took place in that boathouse that's been cut out of the movie. So there was a large investment made to shoot scenes in that room that you'll never see. But it was an aesthetic choice to make it look the way it does. My choices are always aesthetic, but after you've made that choice, then you have to decide how you're going to spend money—what's best, what's fastest. You know there's a limit—although there didn't seem to be a limit on that movie, now that I think of it.

**QUESTION:** How much footage did you shoot on "PART II"?

**WILLIS:** I don't really know. The assistants were laughing about it in Sicily. I seem to remember a figure of about 900,000 feet, but . . .

**SCHWARTZ:** You were Eastman's biggest customer.

**WILLIS:** Yes. I mean they loved us at Eastman and Technicolor.

**QUESTION:** Does anybody know?

**WILLIS:** Yes, the editors know the total. By the time it reached those proportions, I was very interested in holding my head together to finish the movie at the right level in Sicily—because if you've ever traveled in Rome and into Sicily, that alone is enough to put you away.

**QUESTION:** Whose place was that where you shot in Tahoe?

**WILLIS:** It was the old Henry J. Kaiser estate. It was wrecked when we found it, you know. It was coming apart. So the art department went in with a quick half-million dollars and fixed it all up. They fixed some of the inside and some of the outside. They put in a lot of grass—you can't put in a fake lawn, after all—and it was quite beautiful. In fact, Francis was living there. He moved his family in. There were a lot of spaghetti dinners and we had a lot of fun.

**QUESTION:** Do you use a color temperature meter?

**WILLIS:** I've never used a color temperature meter. I'm not a Kelvin freak. I know what the standards are and I like to bend them to this or that. So I do it all by eye. *Continued on Page 924*



(LEFT) In the tape room there are three IVC 9000 recorders, one Ampex AVR-2, and two CPU's for the two CMX 340X Editors. (Bob Bergstrom setting an IVC 9000 up for a studio recording session.) (RIGHT) The on-line editing suite provides control for any of the 2" master recorders, the two multi-track audio recorders and a video switcher. Generally, On-Line is used to auto-assemble shows from edit lists made Off-line. (Mike Avgenackis operates On-line to auto-assemble part of a series of training presentations.)

(LEFT) Off-line editing permits the making of editorial decisions utilizing relatively inexpensive equipment. Clients can then view an edited workprint and make any changes prior to the actual finished On-line. (Mike Shetter makes editorial decisions on a factory tour presentation.) (RIGHT) The production control room allows for the building of footage out of the studio to be edited with the computer later. In the production control there is a digital switcher, character generator, and audio console. (Lyle Hart and Bob Young discuss studio production prior to rolling tape.)



## VIDEOTAPE AS FILM

Continued from Page 900

we achieve the desired effect. For the majority of our location interiors the Lowell-Light Kits work extremely well. They are light-weight and can be easily hidden so that they don't interfere with camera moves or the blocking of the actors. On a typical industrial type, when available, we will utilize a desert type dolly. When the script requires it, we have rented small cranes and lift trucks to accomplish the desired dramatic impact. In these cases we have the option of placing only the camera head on the crane and running cable to the CCU and recorder, or in many cases we load the entire package on the unit. Again, it depends on the specific situation as to how to handle the equipment.

Sound is recorded on each location. If we are dealing only with background noise, we set our EVD 142 shotgun and record it directly on the tape. For more complicated sound requirements we use either a boom on a fishpole, lavaliers, or FM mikes. In most cases the audio is recorded on the videotape on location . . . we break it away from the picture, however, as soon as editing begins.

The final area of location production that points out the videotape-AS-film concept is in mount shots. Since I deal only with pictures and sound, the question was never "Can you mount a television camera?", but "How do you mount it?". In 1973 when we began shooting tape our cameras were not portable. However, we still managed to bolt the camera onto a variety of industrial equipment. Today we normally start with our "Super Grip" and work our mount shots from there. One advantage of our camera is that the viewfinder can be detached so that the picture can be monitored away from the camera. For "gentle" bolt-ons we normally leave the camera on the O'Connor head and secure the whole assembly with Bungie straps. For the more rigorous ones we secure the camera directly to the mount or to fabricated steel braces and tie it down with chain and turnbuckles.

The main emphasis on location footage, as with the rest of the operation, is in shooting each and every scene as a unique entity so that each scene is as good as possible. Naturally, the structure of the eventual sequence must be a paramount consideration, but by emphasizing each scene, as in typical film production, we are able to improve the total product.

### STUDIO PRODUCTION

For our studio work we work very similarly to a film production unit. Sets come



On location video camera is set up at low angle to get dramatic shot of John Deere equipment on forklift unit. The standard high-hat and the O'Connor 50 head provide a good base for many equipment shots. Mounted on a tractor cab or engine platform of an excavator, they facilitate tight action shots of machine operation. (Photographs by Lyle C. Hart and Dorothy Yaworski, John Deere Television.)

in two main categories. For simple sets and limbo or "form" type sets, we use a modular set system called UNISET. This system consists of three-dimensional modules that can be combined into an endless variety of configurations. We have a scale model of the UNISET modules that allow us to plan all sets prior to entering the studio. We also use this model to rough out the light plot for each scene. With this pre-production we are able to reduce setup time in the studio by approximately 30%.

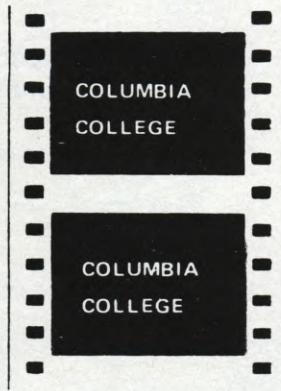
The UNISET modules are TV grey with an epoxy finish. We color them with either lights or we physically paint them. By careful control of exposure and balance we achieve a wide variety of colors and mixtures of colors simply by using gels.

Sets that require more realistic detail

are built internally, using traditional set construction techniques. We keep a stock of flats and parallels to use as basic set units and platforms. To these we add the necessary additional detail. In using this technique we have simulated everything from a parts department in an Industrial dealership to a large office area with partitions, desks, and windows. By combining UNISET and traditional set construction techniques we can accomplish set design when locations are not applicable.

Lighting in the studio is handled in a rather unique way. When I began lighting for television, I used my light meter and attempted to achieve an overall level of about 200 to 250 footcandles. After numerous attempts with different sets and moods, I still wasn't satisfied with

Continued on Page 917



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### FILMING ALONG THE SUSITNA: KAYAKING'S EVEREST

Continued from Page 904

Ward and Cully Erdman, a couple of bachelor river rats that hang out in Aspen, Colorado. Bob Blackadar, Walt's son, was in charge of raft support; we had three Havasu rafts. Bob's lady, Janis Judson, hired on to cook. John Pettit and Victoria "Torre" O'Laughlin piloted the other two rafts. Vivian Pettit, Betsy Hazelwood and Carey Dondero came along as helper-observer-tourist types. The film crew; Tom Frost of climbing fame, Jim Emerson, my thirteen-year-old son Gordon, and I floated down (in kayaks and rafts) with the others to the Gorge. Three other cameramen joined us later by helicopter.

Lori Kincaid, a lovely generous lady, met us at the Anchorage airport and let us camp around her home while we were organizing. The kayaks, Natural Progressions and Hollowforms, had to be reinforced with ethafoam beams so that they wouldn't collapse in the violent water.

Several local boaters acted as guides on nearby Six Mile River, and generally hung around in hopes of getting invited to "The Big Sue". Eighteen-year-old Barney Griffiths was particularly determined to go along. Unfortunately he was forced to swim while he was paddling with our group. After that Walt felt we would jeopardize the trip by taking Barney.

After we finished beaming, fitting knee braces, repairing a raft oar frame that was broken in transit, and shopping for last minute supplies, we moved our little safari onto the Denali Highway and up to the headwaters of the Susitna.

It takes a while for an expedition to shake down into a team, and this one was no exception. The movie cameras and tape recorders were an unwelcome nuisance. The raftsmen, not being able to see into the opaque water, occasionally hung up on the silt bars that laced the McClaren (a tributary of the Susitna) and upstream winds slowed our progress.

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Not being accustomed to the long Alaskan days we didn't know when to get off the river. Sometimes we found ourselves still floating at nine in the evening. But sore muscles and dull minds responded to Janis's excellent cooking. We ate very well on our journey, with more steak and eggs than I've ever eaten at home.

Perhaps our closest brush with death occurred in the relatively minor waves of the McClaren. Walt was giving Torre kayaking lessons. She caught on quickly and kept boating after Walt decided to take a rest on one of the rafts. The sky clouded, Torre became cold and put on a wet suit. Without the wet suit she fitted loosely into Billy Ward's well braced boat, but now she had to jam herself in. On top of this she didn't bother with a spray skirt; her inability to roll, and the flat water didn't seem to require it.

Nobody took particular note of the circumstances until the river started to drop and narrow down. Torre found herself in three-foot waves which delighted her. I caught up about this time and noticed that her spray skirt was missing. I quickly acquired one from a raft and asked her to wear it. When she beached and tried to get out of the boat she couldn't. She struggled for well over a minute before she came loose. Needless to say, if she had tipped over in the icy glacier water she would have drowned.

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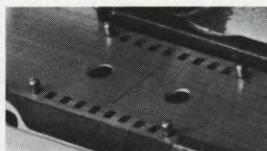
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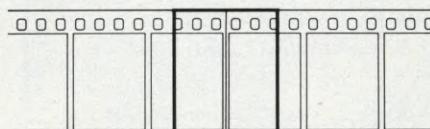


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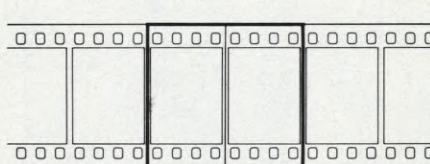


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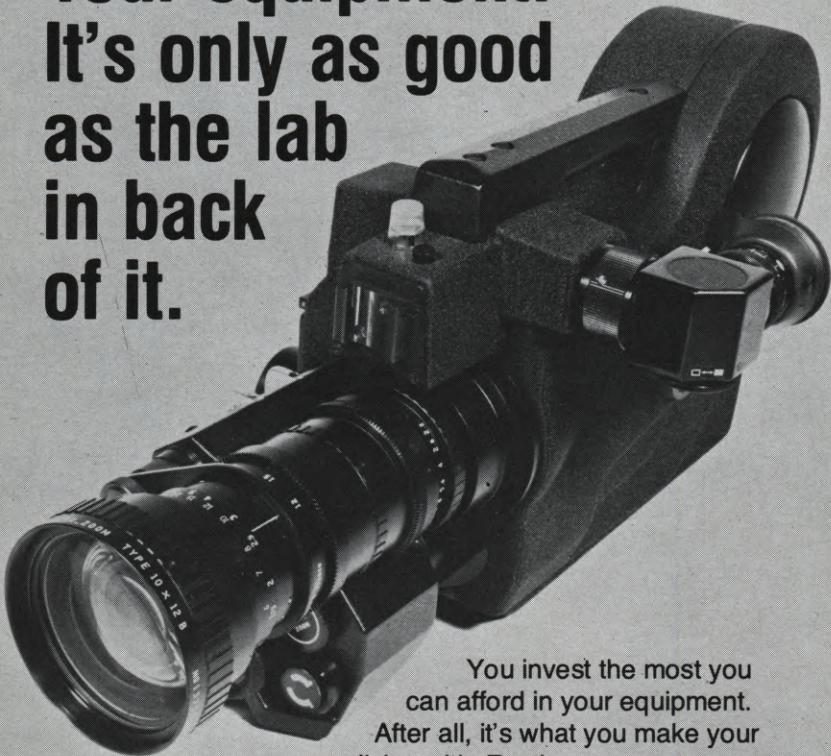
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It's not unusual for disasters to occur in relatively safe places, at unexpected moments. We were lucky, and I knew it. After that episode we began to function as a team, carefully, with leadership and with rules.

Four days after getting on the river we arrived at the head of the Gorge. About the same time the good weather turned, and it began to rain. A coffee cup, sitting empty on a rock, filled in less than two hours. Fortunately, our tents were up. Frost and I were testing Early Winter's Light Dimension Gortex tents and were delighted with the way they held out the water. The Gortex fabric breathes, but is still waterproof. In a tent this means a rain fly is unnecessary. The Light Dimension only weighs three and one-half pounds, and it folds into a small bundle which takes up very little space in a kayak.

From our camp we hiked along moose trails across a ridge to where we could overlook the rapids. Long before we could see we could hear. Pussyfooting through spongy overhanging moss we looked down black cliffs to the water's surface. The tumultuous caldron beneath was all out of proportion with any kayaking water I had ever seen. Someone is going to die here, I thought. For a brief instant I hoped the boaters would decide not to run.

Roger Hazelwood was the first to speak. "It's runnable. We're going to run this thing!"

Walt seemed relieved about what he saw. "It looks better than last time."

"Huge, just huge!" muttered Wouzel.

Route possibilities were narrowed down quickly. One hole in particular frightened everyone; all of the water on the surface was recirculating. A floating object would be held in place where it would simply gyrate around and around. The water going into the hole escaped down deep below the surface where a boat couldn't go.

In water this large the principal fears are popping a spray skirt (which allows the boat to fill with water and become unmanageable), dislocating a shoulder, or getting the paddle torn out of the hands. A swim could be long with more time under water than perhaps anyone could survive. Staying in the boat is vital. Walt made it very clear to everyone, "Your boat is your life jacket here, boys. You can't afford to come out of your boat."

The kayakers named the rapid PREPARATION H, and it was agreed that Walt Blackadar would try it first.

The worst time for the boaters was between when they made the decision to run and when they actually got in the water. This time period was prolonged because we were determined to wait for sun, and we had to get our cameras or

ganized and into position.

For safety reasons I decided to ask each of the boaters to wear a Whillans sitharness (usually used in rock climbing) with a carabiner attached from the harness to the life jacket. I carried a rope in the helicopter with a small partially filled water jug attached for weight. If a boater was swimming and possibly stuck in a hole I would be able to drop the rope to him and pull him out. The boaters were doubtful at first, so we did a test with Walt in quiet water. It was reasonably easy to pick him up and set him down on the shore.

Extra supplies and our other cameramen were flown by fixed wing aircraft into High Lake, a nearby fishing resort. The helicopter moved them from there to our camp on the river. On one of these trips the helicopter pilot, Hunter, handed Walt a message. It was from Barney Griffiths, the boy from Anchorage whom we refused to take along. It read:

*"Walt, I am up at High Lake with the rest of the people. I have my kayak and am going to run the river. I need to know if I can run it with you guys. If not I will run it today. John (Spencer) will fly me in 3 miles above your camp, and I will float down from there. I scouted the river this morning with John from the banks. Please send answer. Barney Griffiths"*

Walt handed me the note. "Blackmail!" I choked. "If Barney goes today he won't have protection. He might drown. And if he makes it we will lose our 'first' for ABC. We have no choice, Walt." We sent a message back to Barney inviting him to run with us.

I'm sure sleep did not come easily to the boaters that night. Hazelwood and Dondero had their pretty young brides to talk with and think about. Walt let a couple of snorts of vodka help him doze off. Cully and Wouze seemed nervous, but youth was in their favor. A little lost sleep wouldn't slow them down. Barney remained a mystery, noncommittal, shy, silent. Interestingly enough, none of the boaters seemed resentful of his actions. They treated him as if he had been a part of the group from the beginning. A common adversary as big as Devils Gorge brings people together.

Morning broke clear. It was a sunny, friendly Alaskan day.

We were well organized; the helicopter dropped the cameramen into position. Walt and Cully headed for their boats while the others went to places where they could watch. Then we put the big Continental camera mount into the helicopter, I crawled in behind it, and we took off.

Walt, of course, was the first to go. His boat was tiny in the big river, a beautiful red projectile that would carry his mind

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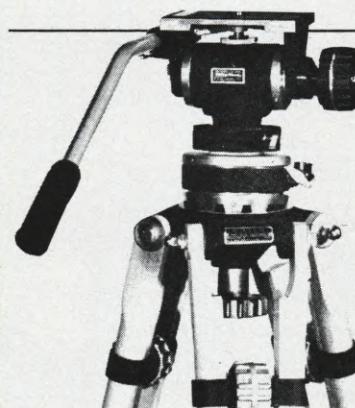
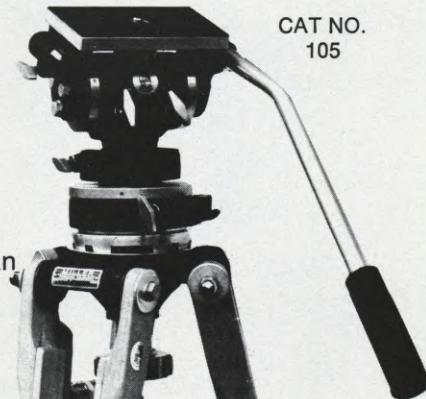
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into his body and his body into the biggest "Maytag" of his most horrible dreams. Down there a few feet off the water, Walt didn't know if he would be able to see all of his reference points. Yet his life depended on it; he had to follow the line he had planned from the cliffs above.

Walt's loneliness must have been excruciating. He eddied in behind a rock, paddled upstream, looked down, searched, hesitated, searched again, and moved back into the current, and off a drop between two larger rocks. Now he was committed to the line down the center between the giant waves. He wanted to hit the right shoulder of the upper wave and he did, but it didn't do what he expected. He was kicked to the right and onto the edge of the dreaded holding hole.

Hydraulic happenings! The Big Sue was set on the rinse cycle. Walt was chewed up and, fortunately, spit out. He rolled up, got knocked over and rolled up again, but each successive roll weakened. He stopped completing his stroke, and then he began pulling his head out first to get air. He came up on his side, sculled, and sucked in air; but he didn't have the strength to get all the way up. Suddenly a big wave knocked him upright, but he was too dizzy to take advantage of it. Under again.

Somehow Walt hung on and finally righted himself, but he was entering the Nozzle facing upstream. The Nozzle is the narrowest point in the canyon—a big firehose that empties into a large pool. The standing waves in the narrows buried Walt, and then kicked him into an eddy where he tried to roll, again and again and again. Finally, totally exhausted, Walt crawled out of his boat. Watching from the helicopter I saw him, and then I didn't. Something was pulling him under, Mae West and all. Whirlpools, I panicked, and threw down the rope. The rotor blades seemed to clip foliage from the cliffs as we hovered over him. He grabbed the near vertical shore rocks, then reached for his boat, broke loose, and was sucked under again. Finally he accepted the rope and we lifted him out of the water and onto the shore. He managed to hang onto his paddle. His boat did a few more spins in the eddy and departed for Anchorage.

"I gave it everything I had, but I didn't get enough air to regenerate my muscles. I'm not ashamed I swam. It was a good swim."

Walt pushed himself beyond the physical limits of a man half his age. He has to have the lungs and heart of a bull. I've never witnessed a more determined struggle.

I radioed to the ground crew that I didn't

want anyone else to run it, that it was suicide, but none of the boaters agreed.

Cully pushed off without the benefit of seeing Walt's run. His line was different, close to the left shore.

Cully floated into the big waves sideways, dove into them, and hung on with his paddle. This technique offers more boat surface to the force of the breaking wave, but the body and paddle act like an anchor holding it in position. A boat which is perpendicular to the wave cuts through, but can flip end over end. There is no way for the paddler in a perpendicular boat to dive into the wave; the bow of the kayak is in the way. Cully learned this technique in ocean surf where the steady predictable waves gave him a chance to experiment. Now his practice paid off. The big waves thundered down on him, and he disappeared into the violent boiling foam, only to come out the other side upright and ready.

Cully had to roll once when he dove into a smaller wave that wouldn't support his aggressive horizontal attack. He knocked himself over but was upright again in a few seconds.

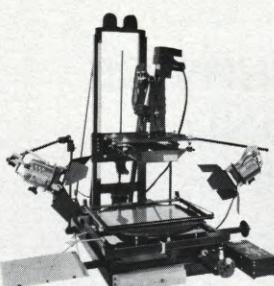
He rolled again in the Nozzle, but effortlessly. He was triumphant. He had made the first non-swimming run of PREPARATION H.

I landed to load a camera and saw Roger Hazelwood approaching. He told me that he had decided not to run, that he had too much to lose and not enough to gain. Betsey looked beautiful beside him, tears in her eyes. A sane man in our midst? Yes, but for good reason. Roger was not the boater the others were, really just a serious weekend devotee among fanatic professionals. His decision was the only intelligent one open to him.

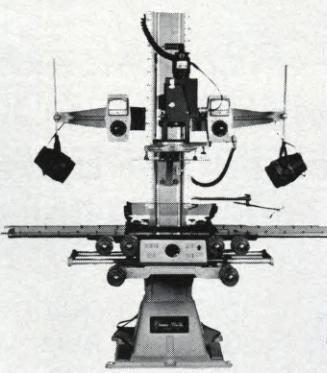
John Dondero went through in good style. He is a pretty boater; erect, with precise paddle handling. Predictably, the waves put him under but he rolled back up. At one point he surfed violently to the left. And then it happened again. John went over in the Nozzle, tried to roll in the left eddy and couldn't. The water was flat, safe-looking, but he could not bring himself upright. Finally he swam and was carried by currents to the shore where he crawled out.

Billy "Wouzle" Ward had the best run of the day. He went between the two giant waves perfectly, not a millimeter off his line. Although he is familiar with Cully's diving technique, he did not employ it. He took each wave straight on and glided along like a fish. He plunged through the Nozzle and into the left eddy completing the first and only run that didn't even involve a roll. He looked up to me in the helicopter, I hand signaled congratulations and gestured for him to cross to the right eddy where our recorder was lo-

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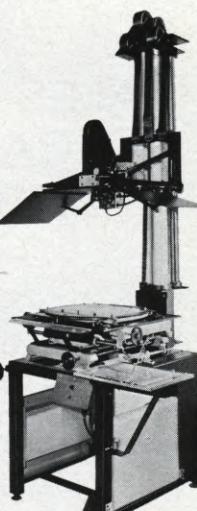
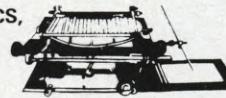
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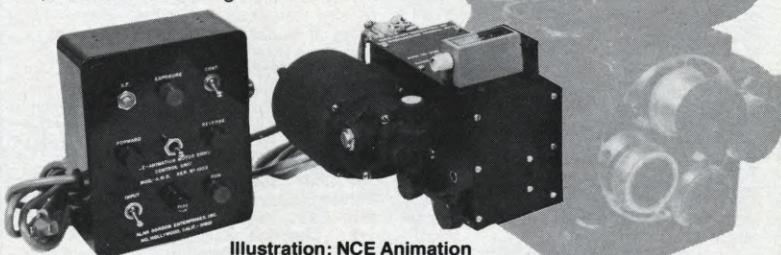


Illustration: NCE Animation  
Motor mounted on Mitchell 16  
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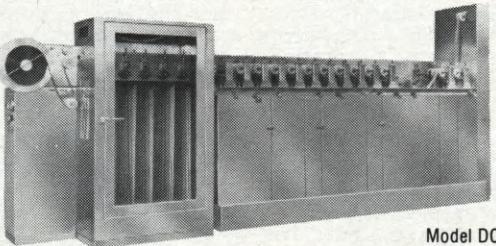


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cated.

Three or four strokes later—slurp, a whirlpool lifted him on end and swallowed him whole. Seconds later he popped up and tried to roll but his efforts were futile. Out of his boat, the current took him down-stream. His thin wornout life jacket didn't float him and he couldn't find the release valve on his inflatable vest. I threw the line, but before it reached him he disappeared over a drop. When I saw him again he was motionless. Then he was sucked under again. Luck saved him at that point. He popped up against the shore, grabbed hold and pulled himself out.

Wouze told me he had just about given up, that he thought he was a dead man when the shore appeared next to him.

Barney Griffiths was the last to leave. The sun was low in the West, shining into his eyes as he came down the river. He uses a long paddle without feathered blades, and he has a white jaw protector on his helmet. He looked more alone than the others, more vulnerable. Knowing about his lack of experience, his youth, and his possible guilt, my stomach knotted. He is a child, I thought, only five years older than my son.

I shouldn't have worried. The pushy Anchorage kid went head on into the big waves and rode them easily. He only got into trouble once when a wave knocked him over and he missed several rolls. He was up going through the Nozzle and, at that point, the Alaskan River Gods smiled on their native son. No whirlpool formed under him, he paddled to shore, frightened, exhausted and happy.

And so PREPARATION H has been boated, and it will be again, unless the dam builders have their way. Like most great river canyons, Devils Gorge is also a big potential hydroelectric power source.

The usual arguments hold true. Conservationists say cost-benefit ratios are terrible, dam proponents point out that the Devils Gorge already stops salmon so there is no fishery to worry about. I guess a dam would hurt kayakers more than anyone; you can't put Everest under water, can you?

More important it is a beautiful canyon; powerful, violent, a raw piece of nature that deserves to live on in its own right. If, like Justice Douglas suggested, some of nature's wonders were equal with men before the law, and able to hire lawyers and fight for their lives in the courts... well, maybe, someday...

#### Post script:

Walt tried PREPARATION H again, two days later, and while he had a better run, he still swam. Cully tried it again and swam, too.

Continued on Page 896

**VIDEOTAPE AS FILM**  
Continued from Page 909

this approach. In the television system there are many things that effect the illumination of the picture. The four main considerations are white level, black level, f-stop, and contrast ratio. Working with traditional contrast ratios from film won't work. **HOWEVER**, the effect of those ratios can be achieved in television by using a different approach.

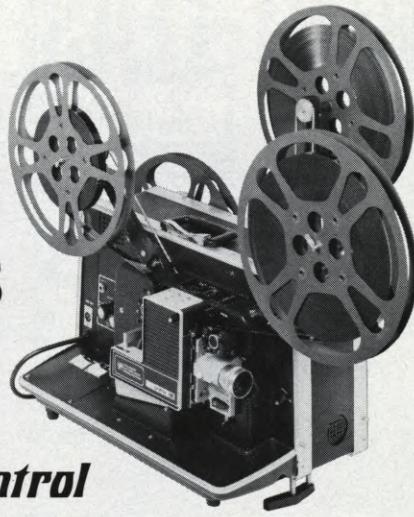
This approach begins with a single starting point, F-STOP. The director working with the director of photography determines the f-stop the scene is to be shot at. The technical director sets up the camera for a normal scene shot at that f-stop. We then use the camera as the light meter. As we light the scene, we worry about two things . . . first, whether there is enough light to get one volt of video on highlights; and second, what the picture on the color monitor LOOKS like. It doesn't matter if we have 100 foot-candles or 500 footcandles, or if we have a contrast ratio of 2:1 or 15:1, all we're interested in is how the picture looks and is there enough signal to get an acceptable video level.

Once the set is basically lit, we again call in the technical director who, using the lighting situation we have established, completely sets up the camera. Once the camera has been optimized, then the Technical Director, Director, and Director of Photography look at the scene and make the necessary modifications in camera adjustment or light level to get an esthetically desired effect along with a good quality technical signal. This system eliminates the confusion between the technical people and the production people.

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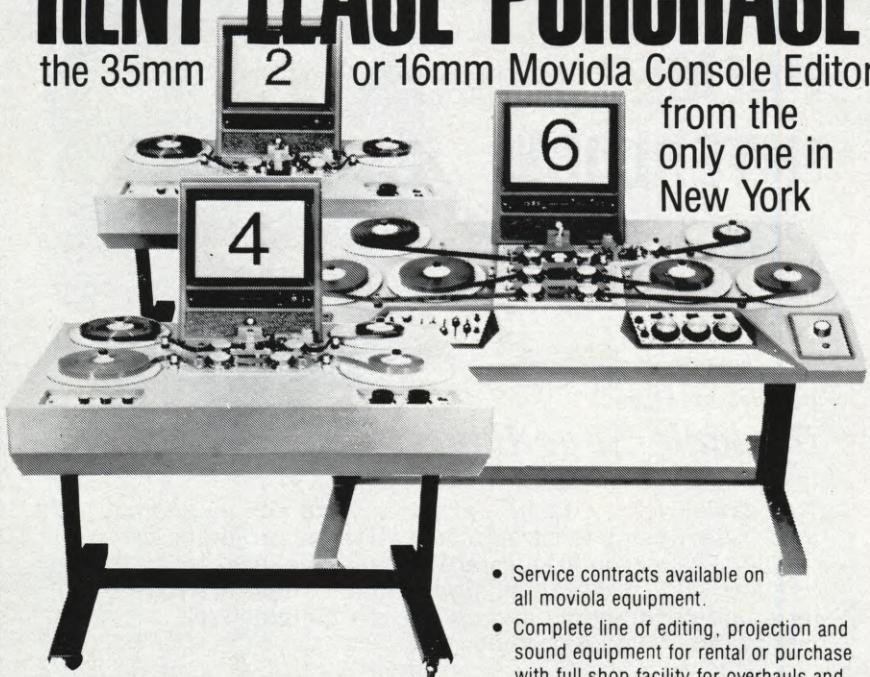
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pensive and of higher quality, this will be a tremendous area for expansion.

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Looking at quality you must understand that any time you mix audio equipment there will be a difference in sound, even from the same source. If you record narration on audio tape and on videotape at the same time, no matter how good your system is, there will be a difference when the two are cut together. You must then equalize the differences out or use one audio source. To save time we use a single audio source. For on-camera narration we simultaneously record the audio and time code on both the videotape and the 4-track audio tape recorder. In editing we use the video audio as a guide, but make a video-only edit. This is followed by an audio-only edit from the 4-track machine. Since both tapes have the same time code, it is merely a matter of setting the times of the video edit into the audio machine and assembling. Voice-over narration is recorded on the same 4-track recorder, so that when it is intercut with the on-camera audio there is no difference in presence.

Probably the best way to demonstrate this system is to take a show with a variety of audio and video situations and walk through the editing process.

Sequence 1 is on-camera narration.

Sequence 2 is voice-over narration with studio models for the video, i.e. no background sound effects (SFX).

Sequence 3 voice-over narration of field scene where location SFX is important.

Sequence 4 picture is cut to music with incidental voice-over narration.

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Step 2—On-camera narration is recorded with a synchronous

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4-track recording made. For convenience, time code is placed identically on both the videotape and the audio tape.

**Step 3**—Voice-over narration is recorded on the 4-track with time code.

**Step 4**—Music is laid on a different track of the 4-track recorder using the previously laid time code. NOTE: This music is laid in total, wild, and will be edited later.

**Step 5**—Editing begins.

With our system we off-line edit, making all audio and video decisions on videocassette. Each audio edit—whether narration, music, or sound effect—is handled individually. The end result is an edited workprint that has a complete narration track, but only bits and pieces of music and SFX. The edit decision list, however, has all the audio and video events listed. We then on-line the entire show in the auto assemble mode.

**Sequence 1**—Using the studio tape as a guide, establish the in and out points of the on-camera narration. Make a video-only edit. Using the same time code make an audio-only edit from the 4-track to the cassette. This audio-only edit is given a reel number of two, which is used for all narration.

**Sequence 2**—Make an audio-only edit of the voice-over narration. Then edit the video-only edits of the studio material.

**Sequence 3**—This is a narration-dependent sequence with the location SFX as an important element. First edit the voice-over narration. Next edit the picture to the narration. Since you want the SFX from the location footage, these are made as a both (audio and video) edit.

In working with the cassette as each new audio or audio/video edit is made, any previous audio is erased. Therefore, from time to time, it is necessary to let the computer reassemble the needed audio. Although this may seem confusing, remember the main purpose of the off-line editing session is to make the editorial decisions so that the show can be put together effectively on-line. The actual edited workprint is a by-product and although very helpful, need not be perfect.

If this sequence is picture-dependent, then the process would be reversed, i.e. picture with location sound edited with location audio, THEN narration edited.

**Sequence 4**—This sequence is music-dependent with voice-over narration and SFX added. The first step is to take the music and edit it onto the cassette. It is given a reel designation of

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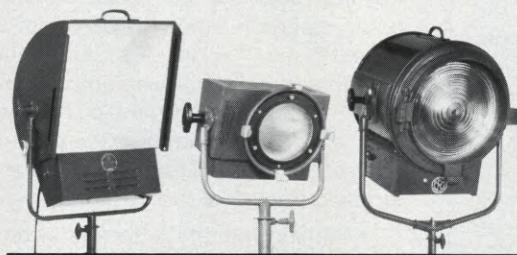
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three to separate it in the edit list from the narration reels. (With complicated music tracks you would usually build music A and music B tracks. These are designated as reel three and reel four. They would then be mixed during the final mix down). Next the picture is edited to the music. These edits are done as BOTH edits with the audio to keep the SFX. Finally, the narration (reel two) is placed on the cassette.

This completes the off-line edit. You have the picture edited without dissolves or effects. You have a complete audio decision list with narration, SFX and music, but on the actual off-line workprint you have a hodgepodge of music, SFX and narration. If necessary, we will go back and have the computer reassemble the narration track so that a client viewing the workprint will hear all that narration.

The next step is to make the synchronous 8-track audio master. First make the 8-track machine the recorder and the 4-track machine the only play machine. Turn on track 2 of the 8-track and designate reel two as the reel to assemble. Use auto-assemble mode B and assemble all the narration to track 2 of the 8-track. With mode B the computer will only assemble events designated for reel two (narration, both on-camera and voice-over). I've found that for a 30-minute show it takes about one hour to auto-assemble narration. If I'm confident that the audio levels were recorded properly, I usually let the computer run and use that time for other purposes.

Once the auto assembly for track 2 is complete, place track 2 of the 8-track on safe and turn on track 3. Change the reel designation of the playback machine to Reel Three and auto-assemble mode B all events that make up the music track. This process is continued until you have completed the 8-track audio master.

At this point you have an 8-track master audio tape; now you assemble the video. The computer takes the off-line list and begins assembling the footage; at this point it adds effects, dissolves, and supers. Depending on the number of raw footage reels and the amount of computer research time, for a typical 30-minute show, it will take from three hours to eighteen hours to assemble on-line.

The final step is the audio mix-down. This is where you combine the output of each of the different tracks on the 8-track to audio track 2 of the cassette.

In working with the 8-track it is convenient to have the same time code recorded as is on the edited videotape. If the time codes are different, simply insert the offset into one of the constant registers and use that constant to provide the necessary trim-in offset.

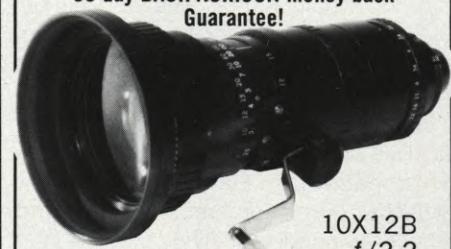
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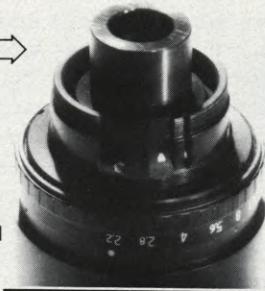
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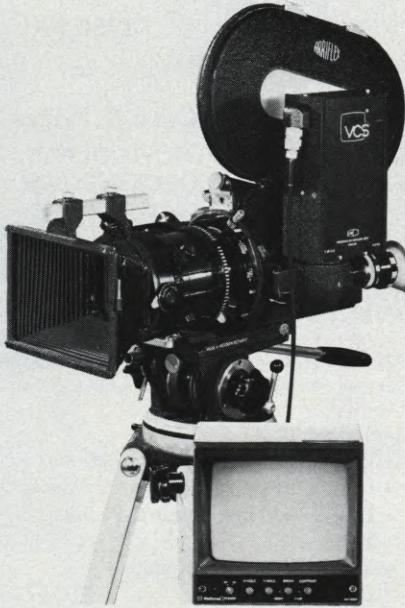
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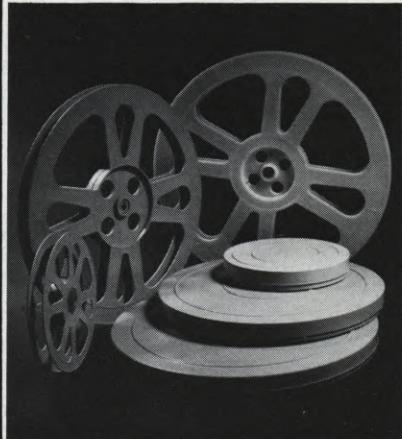
The mix down is where the CMX system shines. First you initialize the edit master cassette as the record machine and the 8-track as the play machine. Each track of the 8-track comes up as separate inputs on the audio mixer. Establish sync between the two machines then make one edit onto audio 2 only for the total length of the program. As the edit takes place, you mix the sound as you are seeing the picture. Now suppose you decide halfway through that the scene you are mixing needs more music level. Rather than starting all over you hit "all stop", look at the time code, and adjust the in points of the record machine and the play machine so they are about 10 seconds prior to the change you want and then start to record again. Unless you've made major level changes you will not hear this edit, even if it takes place in the middle of a word.

The final item to cover is foreign language. Using the 8-track and the CMX, foreign language work is easy. In a recent show we built our audio on the 8-track master as indicated. We then took the script and a cassette copy of the English version and sent it to our translation house in New York. They timed the sequences and did the translations. These written translations were reviewed and corrected by our people. Once we had approved translations we sent them the 8-track edit audio master. They merely went to a local New York studio, recorded the multi-lingual narration and placed it IN SYNC with the English on the open tracks of the 8-track edit master. We then took this tape and, using the same sync points, we married the multi-lingual tracks with the picture. The end result was a professional English show and a professional multi-lingual show.

Using film production technique and television editing, speed high quality results can easily be obtained. Distribution can be either on tape or film. For film transfers we use Image Transform and have had excellent results. The only aspect of teleproductions I would like to see changed is the dependence of the field television camera on the zoom lens. Recently, people have been doing work in converting television cameras to accept 35mm prime lenses. I applaud this effort and would like to see more work in this area.

As you can see, we are dealing with picture and sound. The recording medium is immaterial. On staff we have people who were totally film based and ones totally television. But there is no conflict because, in all cases, their backgrounds involved communicating with pictures and sound, not with chemicals or electrons.

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## CINEMA WORKSHOP Continued from Page 850

the most unique and interesting. Cinerama employed three divergent cameras covering a horizontal viewing angle of 146 degrees. Theatrical release required three separate divergent projectors that formed a single composite image on a deeply curved screen comprised of overlapping vertical strips. The overall aspect ratio was 2.59:1. However, the effective viewing aspect ratio for most of the audience was somewhat less, due to the deep curvature of the screen.

FIGURE 1 tells the complete technical story of Cinerama. The original Cinerama format called for a frame rate of 26 fps. Note that there is not provision for a sound track. Sound was reproduced from a separate seven-track 35mm magnetic film transport. Five of the tracks fed a five-speaker system spread out behind the screen, while the remaining two tracks fed speakers located to the left and right of the audience. Additional speakers to the rear of the theater could be cued according to action on the screen.

The three-camera shooting system for Cinerama has long been abandoned. Toward the end, some Cinerama productions were shot with a single 65mm camera and 1.25 squeeze (Ultra Panavision 70), then optically printed onto three 35mm strips for projection in Cinerama theaters. As Cinerama theaters abandoned the three projector system, the 65mm original would then be printed on a single 70mm release with integral six-track magnetic sound. The print was usually made optically, employing a special "rectifying" optic to reduce elongation of the image that would normally occur at the extremities of the deeply curved Cinerama screen. Likewise, earlier Cinerama three-camera productions could be reduced onto a single 70mm release in this same manner for projection in theaters no longer equipped with the three divergent projectors.

To my mind there has never been a more impressive general release format. I can still recall Lowell Thomas introducing the original Cinerama, and then clutching the arms of the seat as the rollercoaster began its downward plunge. ■

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## INDUSTRY ACTIVITIES

Continued from Page 882

of A.S.C.

Seldom at a loss for words, he claims that he was on the night he was honored by that organization, but he still managed to say:

*"Thank you fellow members. This microphone, familiar as it is, seems unfamiliar to me tonight. I guess the reason for this is that, although I've stood before it on many occasions, extolling the virtues of others, I am at a loss for words to express my own appreciation for the honor being bestowed upon me this evening. In essence, it is a culmination of what the A.S.C. has meant to me personally . . . the reason for its being . . . its tradition . . . the respect and admiration for those who have made possible that which all of us enjoy in this envied clubhouse of ours."*

*"To grace the same podium and be recognized alongside Lee Garmes, my friend and colleague of many years, becomes a double honor to me. I used to assist Lee and I learned a great deal from him. He often kids me about a fellow who inadvertently took the name of Mr. Yelnats Zetroc. It all began on a film I was photographing several years ago. Like all films, it began with every hope of eventual success, but somewhere along the line story problems developed, with the result that the finished film left much to be desired. In fact, it was a disaster!"*

*"I asked that my name be removed from the credits, but the producers insisted that it remain, as per contract. Since I had no recourse, I said, half kidding, "Alright, spell my name backwards." and, would you believe it, they actually did! It became Yelnats Zetroc, CSA."*

*"Seriously, though, several years ago when the custom of honoring members was proposed and adopted by the A.S.C. Board of Governors, I never dreamed that some day I would be the recipient of what I intended for others to receive, and I want you to know how grateful I am. Thank you."*

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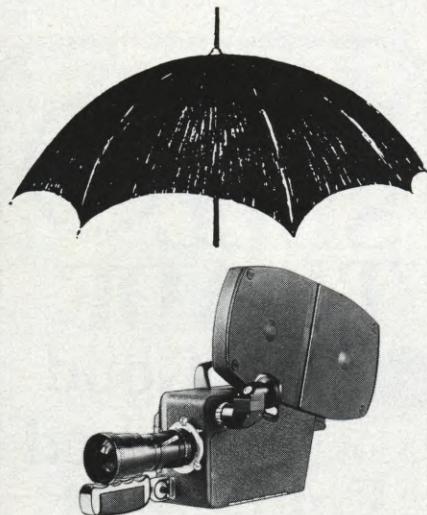
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### AN A.F.I. SEMINAR WITH GORDON WILLIS, ASC Continued from Page 907

**QUESTION:** But you were talking about photo-flood bulbs and throwing in blues and all that. Would you use a color temperature meter then?

**WILLIS:** I do it by eye—always by eye.

**QUESTION:** How would you light an actual interior in which you were going to shoot a lot of day action, as well as a lot of night action?

**WILLIS:** I would rig the room so that I could work both tungsten and daylight-balance lights. And the best way to do that, I've found, is to have an interchange system, so that all I have to do is change bulbs. This eliminates constantly having to relight the same situation.

**SCHWARTZ:** I happened to visit with you that day you were shooting in Corcoran and you had a very interesting rig there. The room was about five times as big as this one and you had 10Ks popping down through the diffusor on the top, so that the people in the background were all lit. You just had to light the foreground where the principals were talking.

**WILLIS:** Yes. There's a big advantage to using overhead diffusion, once you know how to use it. It's not indiscriminate. It's very discriminant. But it takes care of things very nicely.

**QUESTION:** Is there any problem in fighting mike shadows from overhead lights?

**WILLIS:** Not if it's done properly. The sound people probably have less problem with me than they have with anybody. But they have to watch it, because if I'm working on the edge and they get the mike in the wrong way, they won't see a shadow, but they'll be chopping a certain percentage of the exposure off. So they have to keep moving the mike around to find their spots.

**QUESTION:** Do you ever put white paper or card on the floor to reflect up?

**WILLIS:** Yes. I do it whenever necessary.

**QUESTION:** I'd like to ask about the film "PARALLAX VIEW". That convention center at the end—the whole

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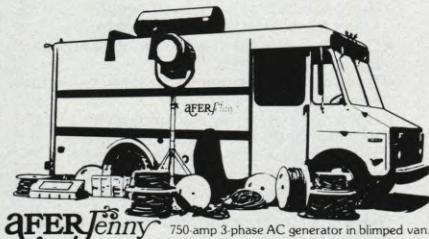
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place from the catwalk to below had a tremendously even light source, and I was wondering ...

**WILLIS:** Well, I didn't light that. I used the source lighting that was there. The first thing I ask myself when I walk into a place of that kind, or of any kind, is: "What does it look like with the lights on that are there?" That place happened to be loaded with mercury vapor lamps. And I thought, "Goody-goody!" Because if I'd actually had to light that place, I'd have gone bananas.

**QUESTION:** How do you filter for mercury vapor—and what kind of cast would you get if you shot it unfiltered?

**WILLIS:** In that case the light was unfiltered, because I like that kind of blue quality. But I mix light a lot—like fluorescents and tungstens. I just put a 2C filter in for the fluorescents and it shaves just a little bit of the ultraviolet, the awful part of that bluish cast. In other cases, we just change the fluorescents. I put daylight fluorescents in so that I won't have to fool with them. Fluorescents are very versatile.

**QUESTION:** Are there any fluorescents that are about 3200 Kelvin?

**WILLIS:** Yes, but you can't get any light out of them. Nothing happens.

**QUESTION:** You said before that you had a lot of preliminary discussions with the director about concepts. What decisions did the two of you have to make?

**WILLIS:** By the way, that goes on with me in regard to any movie I shoot. Because I really don't believe that you can just photograph a movie; you have to decide what it's supposed to look like before you can make a decision on how to light it. In this case we had to decide how to handle the earlier period material, as opposed to the later period material. Structure is very important. We had to decide such things as: how we should structure it, how we should frame it, how we should handle it so that there is definition between the various periods of the story. There's a lot of tableau photography in this movie, especially in the period work; 90 percent of it is tableau.

**QUESTION:** What do you mean by that?

**WILLIS:** Well, tableau or proscenium kind of shooting. Tableau is where a

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scene will play within a frame without making a cut. But it's also a more formalized way of framing a shot—so that it has, in my opinion, a better period feeling than a three-quarter long shot from the corner, which tends to lack definition.

**QUESTION:** I believe you said that during your training period you did TV commercials for a while. What, if any, influence did that have on your style?

**WILLIS:** *It had no influence. But it was very good for me as a learning experience, because during the period when I was working in commercials, they were very sophisticated and expensive. Not that that's the key to anything, but the point is that I had the opportunity to learn a great deal and file it away in my head. I used more technical reference than aesthetic reference; at least, I did in that period.*

**RESPONSE:** The reason I asked is that there seems to be a little school of people these days who are coming out of TV commercials and getting into whatever else. Their styles seem to be similar.

**WILLIS:** *I had an advantage over them. Most of the people who learn the business in television commercials and then move on to features are at a disadvantage. Because you can talk to a lot of people who shoot commercials, and they'll say, "Gee, if I can only get to shoot a feature. I'm going to direct a feature. I'm going to photograph a feature. I'm going to..." Well, that's swell—only the problem is that when they have their first confrontation with something that runs an hour-and-a-half, they suddenly realize that they have a problem. They have to tell a story and tell it well. Fortunately, I grew up in the motion picture business, so I learned about feature movies before I went into commercials. I learned a lot mechanically in commercials, but as far as structure and story were concerned, I learned that before I went to commercials.*

**TO BE CONTINUED**



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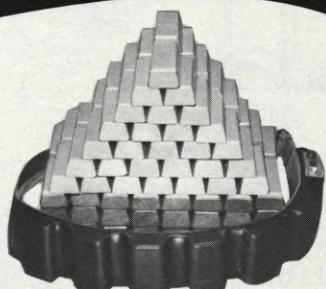
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Arrangements as to availability and other details are to be made directly with the individual A.S.C. member. For further information, contact: American Society of Cinematographers, P.O. Box 2230, Hollywood, California 90028. Telephone: (213) 876-5080.

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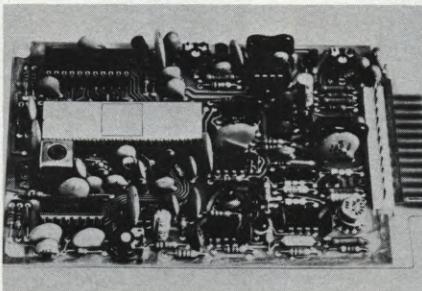
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## WHAT'S NEW Continued from Page 838

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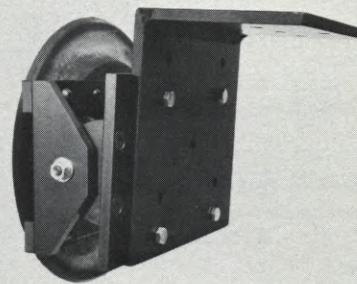
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## TIME, TOMBS AND TRIBULATIONS

Continued from Page 869

these remarkable impressions.) They also knew the Egyptian man who was the last surviving member of the Tutankhamun expedition. The archeologists suggested that we interview him on film to provide a unique first person account for us. "Great!" we thought. Things were looking good at last. But . . .

After only a couple of nights at the Winter Palace Hotel, we began to play a game that's well known to many travelers in Egypt. It's called musical hotels. Hotel space in Egypt is extremely scarce. Construction can barely keep up with the demand. So, to try and keep everyone happy, there's often great shifting about. Consequently, after a day's filming, we had to pack up everything and shift to the Luxor Hotel, which ratingwise is down a notch from the Winter Palace.

Well, it seems the Luxor Hotel could only give us a night's lodging. The King of Spain was coming to town and his entourage needed almost all the space available. So following the day's filming—which naturally was complicated by a freak sandstorm—we spent the evening looking for a new hotel.

At last we came to the Venus Hotel, a cold-water hotel which is located just across the street from this very interesting open air meat market. We were pleased just to find a place to rest our heads. There was too much other stuff we had to worry about. Like finding a place to stay for our on-camera host, Mr. J. Carter Brown, Director of the National Gallery of Art in Washington, D.C.

For two days we tried everything in our power to get a room. But to no avail. Office to office to office we went. This was really getting distressing. The whole film was focused around Mr. Brown telling our story, and here we were on the verge of having to send him back the same day he arrived.

One hour before Mr. Brown and his wife arrived, the Chicago House, an archeological center run by the University of Chicago, came to our rescue with a place for the Browns to stay. And to this day my gratitude is undying.

At this point, I know you're asking yourself, "Why didn't these bozos plan everything in advance?" Well, the answer to that is—we did. It's just that things are "difficult". There was nothing really malicious about the circumstances. It's just that the King of Spain came with less than a year's advance reservation. And besides, things are "difficult". It's all a matter of priorities.

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butter made from yak milk (if you love blue cheese, you're home free) and the good Egyptian beer, things went relatively smoothly. Carter Brown was a real trooper and we moved along rapidly with his filming.

Then, due to the fact that it was becoming almost humdrum for us, the great gods of Egypt again worked their whimsical magic upon us.

We were due to spend about an hour one morning filming some background about the River Nile aboard a felucca, one of the elegant Egyptian sail boats that have traveled the Nile in one form or another for thousands of years. Sound, you might or might not know, travels extremely well over water, and we kept getting lots of interference from the daily life of the town of Luxor floating out towards our microphone. So off we went down the Nile in search of peace and quiet. And we got it. Many hours worth. We found a pleasant spot and floated along till we were through with our filming. "OK," we said, "let's go back." Except there was a little problem. The wind had died, and there's no motor aboard a felucca. We were, in polite words, stuck. The wind never came back.

The first mate did pull us along by a long rope for a while. Carter Brown even jumped out and helped pull us along. Our progress was slow. Finally, a huge rusty hulk of a ship came by and the crew was kind enough to strap us alongside and tow us back to Luxor. So there we were with most of a valuable day lost.

It wasn't until the next day, though, that things truly began to disintegrate. First, we discovered that an error had been made in Carter Brown's air reservations. He was scheduled to leave a day earlier than planned and there was no way we could change it at this point.

Then our first-person interview with the sole survivor of the Tutankhamun expedition had to be cancelled because the man was now in jail for having the West Bank hotel he ran full of stolen mummies.

And also, we had been promised access to Tutankhamun's tomb at three in the afternoon on our last filming day, but we didn't get in until 5:30 p.m., which only aggravated our scheduling problems.

Once inside the tomb, we didn't have the luxury of thinking out the "best" solutions to the problems of filming the interior. This was it. Whatever we got before we were asked to leave that night would constitute our "tomb" footage. This is where Carter Brown gets a double "E" for effort. That man went through his paces like a true pro. We stopped for nothing.

When we came out of Tutankhamun's tomb near midnight, it was then that the whole meaning of Ancient Egypt's ap-

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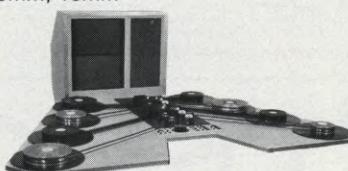
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proach to death became abundantly clear. The true serenity of that moment will haunt me forever. It made all the problems and frustrations we had suffered melt into nothing.

But wait, good friends, this story is not over yet. When we left the Valley of the Kings and finally arrived on the banks of the Nile, the ferryman who was supposed to wait for us and take us back across was not there. So off we went, careening around the countryside in our battered Volkswagen bus in a scenario that seemed to blend the antics of the Marx Brothers and the Keystone Cops into one insane midnight adventure. On we ran, hither and thither, trying to stave off disaster one more time. For if we didn't make it across tonight there would be missed planes and complications galore.

And so I leave us there. You, with your imagination to complete the adventure. I, with my mind wondering about taking on a film about a pharaoh and his treasures. Because, you see, making films about pharaohs can be, well, let's just say, "difficult."

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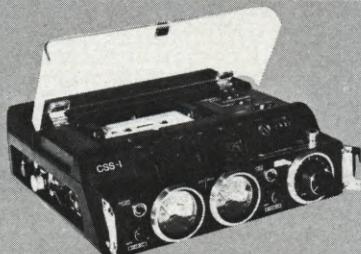
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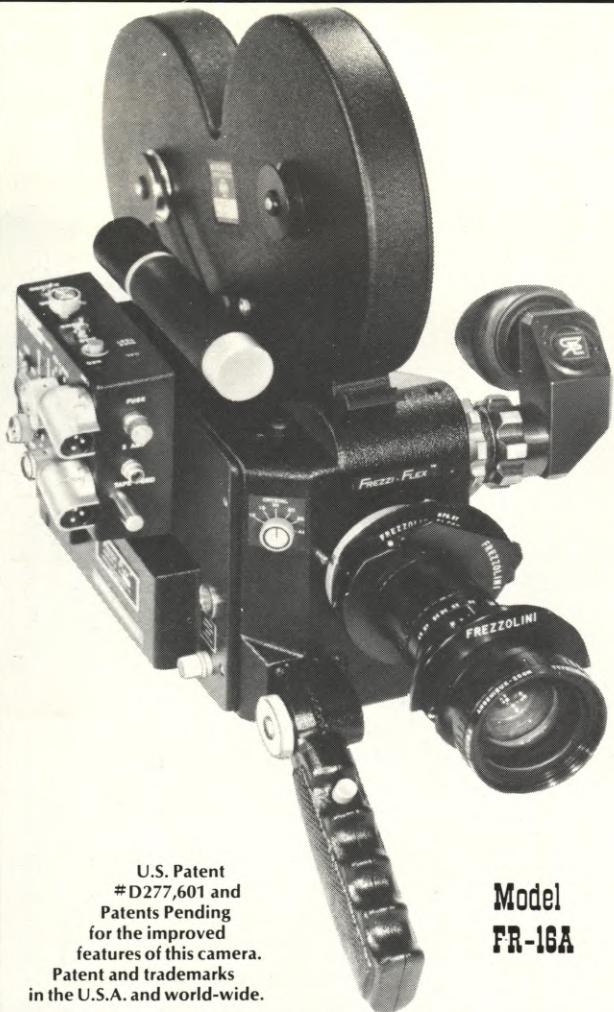
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### "YOU ASKED FOR IT—NOW YOU HAVE IT."

IT." When color negative (ECN II), with an exposure index of 100, was introduced, many 16mm producers who were familiar with the shooting and handling of the slower Ektachrome reversal (ECO), began using the 7247. Dirt, abrasions, cinch marks, scratches, occasionally caused in the conforming process were not apparent when reversal film was printed to a release printing internegative.

Special techniques are required for handling original negative. Utmost care, including the use of lint free gloves, hospital caps and gowns, anti-static rugs, clean-air rooms and immaculately clean synchronizers and splicers, is necessary. A microscopic piece of dirt, 10 microns in size (10/1000 of a millimeter) on 16mm negative appears as a white spot 2 1/2 millimeters in diameter on an 8 foot screen! The same piece of dirt would be almost invisible if reversal film were used.

Even with meticulous care some blemishes to the negative may occur. If the original negative with these imperfections is printed to an intermediate duplicating film to be used for release printing, the problem is compounded. If a printing negative could be made without these printed-in defects, it would be a fantastic innovation!

Some years ago, modifications were made to existing printers, whereby a solution was applied to the original negative at the printing aperture by the use of a wick applicator or a constant flow of solution. This was known as "wet-gaté printing". Initial tests indicated that this approach was in the right direction, but the liquid was often unevenly applied producing undesirable streaks, bubbles, and skips caused by splices. The next step was obvious—submerge the entire printing gate into an aquarium type tank. This would eliminate the uneven application problem.

We approached a reliable manufacturer of motion picture equipment who already had expertise in immersion printing and we ordered

a special 16mm printer for total immersion printing. This machine was designed to meet our specifications and is capable of printing from any negative or positive to any intermediate duplicating material by either method—step-contact or step-optical. Instead of printing by the continuous method, registration pins are used on both the original and the raw stock. This step printer holds both films in a static position while the exposure is being made, thus enhancing definition. Base and emulsion imperfections, typically common to preprint films are corrected due to the "filling in action of the liquid".

After months of design, tests and manufacture, this one-of-a-kind printer is now installed in our laboratory. Tests proved that the solution application problems were eliminated. A standard color additive light source offers "color correction", fades and dissolves of various lengths, as well as zero cuts. Printing speed is slow—18 feet per minute as compared to release printer speeds of well over 300 feet. In the optical mode, negatives or masters can be produced with either A or B emulsion positions.

In a recent test an original color negative was sandpapered and scratched and was then printed optically on a standard dry printer. The printed-in scratches were horrible when projected. The same scratched original negative was printed optically on our new total-immersion printer and produced an excellent printing negative. The scratches could not be detected. Amazing. We showed these comparison tests to several well-known industry experts, who unanimously agreed that the result from the total immersion step-printed negative was the finest quality they had ever seen.

The use of this machine is not limited, for it performs wonders on all duplicating films—negatives, positives, or reversals. The printer is now in operation and we believe the results will exceed our customers highest expectations.

*Byron*

**byron**  
MOTION PICTURES

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